

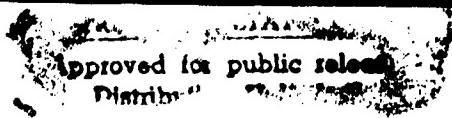
NASA SP-449

AD-A279 541



DTIC
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A Catalog of NASA Special Publications



94-14228



93 12 210 42

DTIC QUALITY IMPROVEMENT

A
Catalog
of NASA
Special
Publications

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Scientific and Technical Information Branch 1981
National Aeronautics and Space Administration
Washington, DC

Introduction

THIS booklet attempts to list all Special Publications that have been released by NASA since the series was begun in 1961. It is an effort to still cries from those who have asked for a comprehensive listing. The Special Publication series, which has included some of NASA's most ambitious scientific or technical books, has covered a broad range of topics, including much of the agency's research and development work, its full range of space-exploration programs, its work in advancing aeronautics technology, and many associated historical and managerial efforts. In the nearly two decades that the series has existed, some 1200 titles have borne the SP identifier.

How NASA Special Publications came about may be instructive. Along with several predecessor agencies, NASA research laboratories were accustomed to publishing reports, using a formal structure of four or five separate series, with the characteristics of each series carefully defined. Inevitably this raised the question, how do you categorize reports that don't fit existing patterns? The answer, obviously, is that you put them in another series labeled "special." The backroom gnomes who invented this solution had no knowledge that they were inventing a bushy tail that would soon wag the dog. By the mid-1960s the new series was becoming preeminent among NASA publications, and beginning to win worldwide recognition.

The reason of course is that these were exciting years. It was the time of Mercury, Gemini, and the foundation work for Apollo in manned spaceflight; of Ranger, Mariner, and Surveyor in unmanned probes; of dozens of scientific and applications satellites. It was a time when weather satellites first gave early hurricane warnings, and when relay stations in the sky made intercontinental television an everyday affair. It was a time when spacecraft began to capture and return exciting images from space, of steadily improving resolution and quality, providing insights long denied to terrestrial eyes. The editors producing NASA SPs worked long and hard at obtaining the best reproduction quality that could be managed with the constraints imposed by time and available funds, and the quirks of Government printing regulations.

So the series flourished and grew beyond precedent and dreams. Subsets appeared within the numbering scheme, with special blocks of numbers for handbooks, for histories, for technology-utilization books, for bibliographies, and for spacecraft design criteria. The SP General series bloomed with mission reports, scientific results, aerodynamic treatises, atmospheric models, structural analyses, and planetary atlases. By the mid-1970s it was evident that increasing selectivity and the invention of subsets were not effective in checking the overbalancing growth of the series, and a reorganization took place. Analysis showed that more and more proceedings of conferences were being published, for nowadays research and exploration are almost invariably collective activities, and the practitioners are intensely interactive people. So these publications were split off and given a series of their own, Conference Publications. Handbooks, data compilations, and computer printouts became Reference Publications. Administrative and ephemeral studies were relegated to other crevices of the publishing system. But so wide-ranging are NASA's goals and missions, that the flow of forthcoming SPs remains scarcely abated.

As this booklet goes to press, there are about 450 titles in the General SP series alone. Many have been very popular, often publicized by word of mouth; but promotion and distribution have perhaps never been adequate, and so visibility is somewhat limited. NASA's policy has been to recognize that it can provide copies only to its "extended family"—itself, its contractors and grantees, and the various academic, scientific, and industrial communities involved in space exploration and aeronautics. The general public has been expected to turn to the Government Printing Office or to the National Technical Information Service for publications. Both organizations have recently been displaying talent in book merchandising, but for most of the life of the SP series it has been sadly true that a

would-be buyer had to want a book pretty badly to get it. Nevertheless, several dozen Special Publications have become best sellers, including EXPLORING SPACE WITH A CAMERA, THIS ISLAND EARTH, APOLLO EXPEDITIONS TO THE MOON, MISSION TO EARTH, and THE MARTIAN LANDSCAPE. The popularity of the richly illustrated books came as no surprise to the backroom editors who produce SPs, but who would have foreseen the success of such unassuming titles as CLARITY IN TECHNICAL REPORTING, or SOLDERING ELECTRICAL CONNECTIONS?

Special Publications produced in the last twenty years cover a range of subjects. Many of NASA's glorious moments are found in this series. Some of the SPs are scientific and are distributed mainly within a discipline; others present a popular discussion of NASA's programs and are heavily illustrated with color imagery from space.

Those Special Publications thought to have a wide interest or which were disciplinary classics were printed at GPO, and those published within the last few years or which have been good sellers are still available from GPO.

Copies of all books listed as available from NTIS as well as books allowed to go out of print at GPO are available from NTIS. A note of caution: if you order a book from GPO and a reply indicates that it is out of print, you should reconsider your order. If you have ordered a book primarily for the photography or imagery, a subsequent order from NTIS will not be satisfactory. If, however, your interest is in the text, the black and white photocopy supplied from NTIS will be suitable. NTIS is the sales source for public documents produced by the government agencies. A few printed copies are available initially, but once that supply is depleted, NTIS supplies photocopies.

In the list of publications that follows, a brief description is given together with the original sales source and the publication date. The prices are not listed because they change. Phone or write GPO or NTIS for prices of publications that interest you. GPO will want to know the NASA SP number; NTIS will want to know the seven-digit NASA accession number.

As you browse through this list, and you find an attractive title, take care to notice the date of publication. Many books are out of date, and are of historical value only. For example, some books on Mars predate the 1976 Viking mission.

This capsule account of the growth of NASA SPs is necessarily abbreviated, and omits many tales of the lurches, false starts, and dead ends that accompany many human enterprises. It does suggest, though, that as long as bright people devote their lives to exciting research and exploration, energetic and devoted backroom editors will remain to try to capture their results, and a little of their spirit, on paper.—Kay E. Voglewede.

Addresses for ordering publications

GPO:

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402

(202) 783-3238 or (202) 783-3311 Price information; orders

NTIS:

National Technical Information Service
5285 Port Royal Rd.
Springfield, VA 22161

(703) 487-4780 Information or document accession number
(703) 487-4650 Sales Desk; price information
(703) 487-4630 Subscription information for bibliographies (SP-7000 series)

COSMIC:

Computer Software Management and Information Center
Barrows Hall
University of Georgia
Athens, GA 30601

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Histories and Chronologies	49
Technology Utilization	53
Management Evaluation and Analysis Standards	69
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Space Vehicle Design Criteria	75
Reference Publications	85
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General

NASA-Industry Program Plans Conference, July 28-29, 1960

*I. H. Abbott, M. B. Ames,
H. L. Dryden, et al.*

N63-90346 126 pp
Avail NTIS 1960

Proceedings of a Conference on Results of the First U.S. Manned Suborbital Space Flight

H. L. Dryden

N64-80458 76 pp
Avail GPO 1961

Proceedings of First National Conference on the Peaceful Uses of Space

N64-81182 179 pp
Avail NTIS 1961

Results of the Second U.S. Manned Suborbital Space Flight, July 21, 1961

N64-84681 58 pp
Avail GPO 1961

Proceedings of the International Meteorological Satellite Workshop, November 13-22, 1961

NASA meteorological satellite program, Tiros satellites, cloud studies, NASA meteorological satellite plans for the future.

N62-11221 233 pp
Avail GPO 1962

NASA Project Names

A listing of names and code words associated with NASA programs.

N62-11673 20 pp
Avail NTIS 1962

Results of the First United States Manned Orbital Space Flight, February 20, 1962

N62-10229 204 pp
Avail GPO 1962

U.S. Standard Atmosphere, 1962

Tables of atmospheric properties, systematic variations in the atmosphere, gravity, geopotential.

N63-13176 5 pp
Avail NTIS 1963

The United States in Space

Activities in the United States space program.

N64-12818 227 pp
Avail NTIS 1963

Proceedings of the Experimenters' Information Meeting on the Apollo Applications Program in Bioscience

D. R. Beem, S. J. Gerathewohl

N66-31806 137 pp
Avail NTIS 1966

U.S. Standard Atmosphere Supplements, 1966

Tables and models depicting conditions other than mid-latitude mean.

N67-37900 304 pp
Avail NTIS 1966

Short Glossary of Space Terms

Glossary of technical terms in frequent use by aerospace technologists.

NASA SP-1
N66-25785 55 pp
Avail NTIS 1962

Proceedings of the Second Image Intensifier Symposium

Advances in science, technology, and application of image tubes. Symposium, October 1961.

NASA SP-2
N62-14873 252 pp
Avail NTIS 1961

List of Selected References on NASA Programs

Technical reports, technical notes, technical translations, journal articles, speeches, Congressional documents.

NASA SP-3
N62-14103 263 pp
Avail NTIS 1962

NASA Day, April 27, 1962: Western Space Age Industries and Engineering Exposition and Conference

Space science, applications, tracking and data acquisition.

NASA SP-4
N62-14863 66 pp
Avail NTIS 1962

Space Scientists and Engineers: Selected Biographical and Bibliographical Listing, 1957-1961

NASA SP-5
N63-90035 336 pp
Avail NTIS 1962

Results of the Second United States Manned Orbital Space Flight, May 24, 1962

Spacecraft and launch systems, modified Mercury network, space phenomena, medical aspects.

NASA SP-6
N62-14691
Avail NTIS

107 pp
1962

Dictionary of Technical Terms for Aerospace Use

W. H. Allen

NASA SP-7
N66-10413
Avail NTIS

310 pp
1965

Proceedings of the Second National Conference on the Peaceful Uses of Space

Mercury, Apollo, Gemini projects; meteorological and communication satellites. Conference, May 1962.

NASA SP-8
N63-11137
Avail GPO

272 pp
1962

Index of NASA Technical Publications With Abstracts

July 1960 to December 1961.

NASA SP-9
N63-90006
Avail NTIS

432 pp
1961

Launch Vehicles of the National Launch Vehicle Program

J. E. Webb

Technical descriptions of Scout, Delta, Titan, Atlas, Thor-Agena, Centaur, Saturn, advanced Saturn, and Nova launch vehicles.

NASA SP-10
N63-10712
Avail NTIS

34 pp
1962

Proceedings of the NASA-University Conference on the Science and Technology of Space Exploration

*H. R. Anderson, W. R. Badeen,
G. W. Beadle, et al.*

Rockets, geophysics, astronomy, celestial mechanics, bioastronautics. Conference, November 1962.

NASA SP-11
N63-11501
Avail GPO

412 pp
1962

Results of the Third U.S. Manned Orbital Space Flight, October 3, 1962

Spacecraft and launch vehicle performance, aeromedical analysis, pilot's flight report.

NASA SP-12
N63-11990
Avail GPO

122 pp
1962

Geophysics and Astronomy in Space Exploration

*R. E. Bourdeau, J. K. Kupperian, Jr.,
G. H. Ludwig, et al.*

Sounding rockets, space flight ionosphere studies, particles and fields research in space, astronomical research in space, aeronomy research.

NASA SP-13
N63-11503
Avail NTIS

45 pp
1962

Lunar and Planetary Sciences in Space Exploration

*H. R. Anderson, J. E. Conel,
M. Eimer, et al.*

Radar astronomy, exploration of deep space, interplanetary space physics, astrophysics, geological exploration of the Moon and planets.

NASA SP-14
N63-11504
Avail NTIS

84 pp
1962

Celestial Mechanics and Space Flight Analysis

*C. R. Gates, T. W. Hamilton,
W. M. Kaula, et al.*

Computer techniques, satellite orbits, spacecraft flight, space flight optimization.

NASA SP-15
N63-11505
Avail NTIS

42 pp
1962

Data Acquisition From Spacecraft

*W. R. Badeen, A. G. Ferris,
C. C. Kirsten, et al.*

Role of data processing in orbit determination, scientific and meteorological satellites, data acquisition at planetary ranges.

NASA SP-16
N63-11506
Avail NTIS

58 pp
1962

Control, Guidance, and Navigation of Spacecraft

*J. C. Bird, B. F. Doolin,
J. V. Foster, et al.*

Space rendezvous, atmosphere entry, space vehicle attitude control.

NASA SP-17
N63-11507
Avail NTIS

56 pp
1962

Bioastronautics

*S. J. Gerathewohl, B. E. Gernandt,
R. S. Johnston, et al.*

Bioengineering, exobiology, environmental biology, physiological and behavioral sciences.

NASA SP-18
N63-11508
Avail NTIS

36 pp
1962

Chemical Rocket Propulsion

*C. L. Ball, M. J. Hartmann,
E. R. Jonash, et al.*

Physics of liquid propellants, pumps, turbines, chemical rockets, research on rocket combustion and thrust chambers.

NASA SP-19
N63-11509
Avail NTIS

55 pp
1962

Nuclear Rocket Propulsion

*D. Bogart, H. H. Ellerbrock,
D. S. Gabriel, et al.*

Fluid flow, heat transfer, reactors, dynamics and control of nuclear rockets.

NASA SP-20
N63-11510
Avail NTIS

62 pp
1962

Power for Spacecraft

*C. A. Barrett, D. T. Bernatowicz,
T. P. Moffitt, et al.*

Interrelation of power requirements, energy sources, conversion techniques.

NASA SP-21
N63-11511
Avail NTIS

27 pp
1962

Electric Propulsion for Spacecraft

*E. E. Callaghan, J. R. Jack,
S. Lieblein, et al.*

Power generation systems, electrothermal thrusters.

NASA SP-22
N63-11512
Avail NTIS

37 pp
1962

Aerodynamics of Space Vehicles

*M. H. Bertram, R. W. Boswinkle, Jr.,
J. P. Campbell, et al.*

Launch vehicles, space vehicle landing, hypersonic cruising, advanced reentry vehicles.

NASA SP-23
N63-11513
Avail NTIS

57 pp
1962

Gas Dynamics in Space Exploration

*H. J. Allen, T. N. Canning,
G. Goodwin, et al.*

Hypersonic flow fields, gases at hyper-velocities.

NASA SP-24
N63-11514
Avail NTIS

52 pp
1962

Plasma Physics and Magnetohydrodynamics in Space Exploration

*A. Busemann, M. C. Ellis, Jr.,
R. V. Hess, et al.*

Drag forces in the Earth's upper atmosphere, plasma frequency and radio attenuation, plasma accelerator research.

NASA SP-25
N63-11515
Avail NTIS

78 pp
1962

Laboratory Techniques in Space Environment Research

*D. D. Elleman, F. B. Humphrey,
H. E. Martens, et al.*

High-vacuum research techniques, modern magnetism, magnetic field generation.

NASA SP-26
N63-11516
Avail NTIS

52 pp
1962

Materials for Space Operations

*D. D. Davis, Jr., R. H. Kemp,
G. F. Pezdirtz, et al.*

Nonmetallic materials for spacecraft, ablation materials for atmospheric entry, flow and fracture problems, high-strength materials research.

NASA SP-27
N63-11517
Avail NTIS

47 pp
1962

Structures for Space Operations

*R. A. Anderson, G. W. Brooks,
R. W. Leonard, et al.*

Winged vehicle and planetary entry vehicle configuration and design.

NASA SP-28
N63-11518
Avail NTIS

48 pp
1962

**Proceedings of the Second NASA-
Industry Program Plans Conference**

V. L. Lingle, Jr.

NASA missions, future trends, space sciences program, lunar and planetary programs, biological problems related to space, launch vehicles and propulsion, meteorological and communication systems. Conference, February 1963.

NASA SP-29
N63-15357
Avail GPO

221 pp
1963

**The Observatory Generation of
Satellites**

Orbiting solar, geophysical, and astronomical observations. Symposium, December 1962.

NASA SP-30
N63-15166
Avail GPO

62 pp
1963

**Measurement of Thermal Radiation
Properties of Solids**

J. C. Richmond

Measurement of thermal radiation properties of solids over a wide range of temperatures; emittance studies. Symposium, September 1962.

NASA SP-31
N64-10937
Avail GPO

596 pp
1963

Telstar I

Volume 1. Design, construction, ground facilities uses.

NASA SP-32
N64-10868
Avail NTIS

400 pp
1963

Volume 2. Antennas, results of Telstar tests and experiments.

NASA SP-32
N64-10882
Avail NTIS

525 pp
1963

Volume 3. Components and systems.

NASA SP-32
N64-11079
Avail NTIS

283 pp
1963

Volume 4. Operations, characteristics, performance.

NASA SP-32
N67-12301
Avail NTIS

448 pp
1965

**Space Flight Handbooks. Volume I:
Orbital Flight Handbook**

D. Kraft, G. Townsend

Part 1. Basic Techniques and Data

NASA SP-33
N63-21101
Avail NTIS

323 pp
1963

**Space Flight Handbooks. Volume I:
Orbital Flight Handbook (cont.)**

Part 2. Mission Sequencing Problems

NASA SP-33
N63-21102
Avail NTIS

443 pp
1963

Part 3. Requirements

NASA SP-33
N63-21103
Avail NTIS

384 pp
1963

**Space Flight Handbooks. Volume II:
Lunar Flight Handbook**

F. Martikan, F. Santora

Part 1. Background Material

NASA SP-34
N63-21104
Avail NTIS

143 pp
1963

Part 2. Lunar Mission Phases

NASA SP-34
N63-21105
Avail NTIS

444 pp
1963

Part 3. Mission Planning

NASA SP-34
N63-21106
Avail NTIS

156 pp
1963

**Space Flight Handbooks. Volume III:
Planetary Flight Handbook**

S. Ross

Part 1. Speed Contours and Auxiliary Graphs for Manned Missions to Mars and Venus

NASA SP-35
N64-14175
Avail NTIS

280 pp
1963

Part 2. Supplementary Trajectory Data: Earth to Venus and Earth to Mars

NASA SP-35
N64-14176
Avail NTIS

522 pp
1963

Part 3. Supplementary Trajectory Data: Venus to Earth and Mars to Earth

NASA SP-35
N64-14177
Avail NTIS

530 pp
1963

Part 5. Trajectories to Jupiter, Ceres, and Vesta

NASA SP-35
N66-21045
Avail NTIS

541 pp
1966

Part 6. Mars Stopover Missions Using Venus Swingbys

NASA SP-35
N68-30098
Avail NTIS

98 pp
1968

Part 7. Direct Trajectories to Jupiter, Saturn, Uranus, and Neptune

NASA SP-35
N69-33490
Avail GPO

105 pp
1969

**Space Flight Handbooks, Volume III:
Planetary Flight Handbook (cont.)**

Part 8. Jupiter Swingby Missions to Saturn,
Uranus, Neptune, and Pluto

NASA SP-35
N69-34850
Avail GPO

131 pp
1969

Part 9. Direct and Venus Swingby Trajectories

NASA SP-35
N70-28534
Avail GPO

238 pp
1970

Aerodynamic Design of Axial-Flow Compressors

R. O. Bullock, I. A. Johnsen

Aerodynamic systems design of axial flow compressors.

NASA SP-36
N65-23345
Avail NTIS

524 pp
1965

Conference on Space, Science, and Urban Life

W. E. Thompson

Use of space age science and technology to solve socioeconomic problems of metropolitan areas resulting from industrial growth. Conference, March 1963.

NASA SP-37
N64-11502
Avail GPO

265 pp
1963

Advanced Bearing Technology

W. J. Anderson, E. E. Bisson

Fundamentals of friction and wear on fluid film and rolling-element bearings.

NASA SP-38
N64-15226
Avail GPO

517 pp
1964

Results of the Project Mercury Ballistic and Orbital Chimpanzee Flights

J. P. Henry, J. D. Moseley

NASA SP-39
N64-12915
Avail GPO

77 pp
1963

Proceedings of the Conference on Space-Age Planning

Space-age planning and the peaceful uses of space. Conference, May 1963.

NASA SP-40
N63-21126
Avail GPO

272 pp
1963

Proceedings of the NASA-AEC Liquid-Metals Corrosion Meeting, Volume 1

Liquid metal corrosion processes.

NASA SP-41
N64-20783
Avail NTIS

292 pp
1964

Proceedings of the NASA-AEC Liquid-Metals Corrosion Meeting, Volume 2

NASA SP-42
N73-70372
Avail NTIS

54 pp
1963

Ariel I: The First International Satellite

R. C. Baumann

Development of Ariel I ionosphere satellite.

NASA SP-43
N64-10332
Avail NTIS

84 pp
1963

Proceedings of the Conference on the Law of Space and of Satellite Communications

Space law and communications satellites, free space lower boundary, control of space, orbital regulation, and international cooperation. Conference, May 1963.

NASA SP-44
N64-21136
Avail GPO

212 pp
1964

Mercury Project Summary, Including Results of the Fourth Manned Orbital Flight, May 15-16, 1963

Space vehicle development, mission support, flight operations, mission results.

NASA SP-45
N63-21951
Avail GPO

435 pp
1963

Physics of Nonthermal Radio Sources

A. G. W. Cameron, S. P. Maran

Spectra, polarization, and optical properties of galactic and extragalactic light sources. Conference, December 1962.

NASA SP-46
N65-13251
Avail NTIS

159 pp
1964

Space Cabin Atmospheres. Part I: Oxygen Toxicity

E. M. Roth

High oxygen tension in animals and humans, oxygen toxicity, and drug therapy.

NASA SP-47
N64-31219
Avail GPO

59 pp
1964

**Space Cabin Atmospheres. Part II:
Fire and Blast Hazards**

E. M. Roth

Fire and blast hazards in space cabin atmospheres.

NASA SP-48

N64-20744

Avail GPO

126 pp

1964

**Meteorological Observations Above
30 Kilometers**

Meteorological rocket soundings in stratosphere and mesosphere. Conference, July 1963.

NASA SP-49

N64-23869

Avail GPO

61 pp

1964

**AAS-NASA Symposium on the Physics
of Solar Flares**

W. N. Hess

Spectrographic and magnetic observations of flares, x-ray and gamma ray bursts, radio bursts, energetic particles, theory of flares. Symposium, October 1963.

NASA SP-50

N64-30251

Avail GPO

433 pp

1964

**Proceedings of the Fourth National
Conference on the Peaceful Uses of
Space**

Exploration of space, discoveries from space exploration, uses of weather and communication satellites. Conference, April 1964.

NASA SP-51

N64-30326

Avail GPO

205 pp

1964

**Proceedings of the NASA Conference
on Communicating Through Plasmas of
Atmospheric Entry and Rocket Exhaust**

Reentry communication problems, studies using simulated reentry plasma, flight experiments. Conference, January 1964.

NASA SP-52

N71-70451

Avail NTIS

231 pp

1964

**A Quasi-Global Presentation of
Tiros III Radiation Data**

*L. J. Allison, T. I. Gray, Jr.,
G. Warnecke*

Tiros III worldwide radiation map, synoptic application of infrared data.

NASA SP-53

N65-10301

Avail GPO

16 pp

1964

Scientific Findings From Explorer VI

H. E. Newell

Scientific data acquired by Explorer satellite measurements; astronomy and celestial mechanics, ionospheric physics, and energetic particles in Van Allen belt and magnetic fields.

NASA SP-54

N65-21965

Avail NTIS

377 pp

1965

**Symposium on Thermal Radiation of
Solids**

S. Katzoff

Fundamentals, surface effects, measurement techniques, space environment effects, and applications of thermal radiation of solids. Conference, March 1964.

NASA SP-55

N65-26855

Avail NTIS

590 pp

1965

**Concepts for Detection of Extra-
terrestrial Life**

F. H. Quimby

NASA SP-56

N65-12268

Avail NTIS

52 pp

1964

**Orbiting Solar Observatory Satellite
OSO-1: The Project Summary**

OSO-1 spacecraft dynamics, structural design and fabrication, control systems, data acquisition and command system, power supply, thermal control, experiments, and test program.

NASA SP-57

N66-29482

Avail NTIS

308 pp

1965

**Effect of Ionizing Radiation on a Series
of Saturated Polyesters**

*G. F. Dalelio, R. Haberli,
G. F. Pezdirtz*

NASA SP-58

N65-11059

Avail NTIS

68 pp

1964

**Mariner-Venus 1962: Final Project
Report**

Project organization and management, space vehicle system, trajectory and orbit, tracking and data acquisition, scientific results.

NASA SP-59

N66-14702

Avail NTIS

380 pp

1965

X-15 Research Results, With a Selected Bibliography

W. H. Stillwell

X-15 aircraft development concept, flight research, aerodynamic characteristics of supersonic-hypersonic flight, hypersonic structure, flying laboratory, and bibliography.

NASA SP-60
N65-20162
Avail NTIS

135 pp
1965

Ranger VII Photographs of the Moon. Part I: Camera "A" Series

Lunar surface closeup pictures.

NASA SP-61
N64-31723
Avail GPO

226 pp
1964

Ranger VII Photographs of the Moon. Part II: Camera "B" Series

NASA SP-62
N65-17866
Avail GPO

226 pp
1965

Ranger VII Photographs of the Moon. Part III: Camera "P" Series

Lunar photographs taken by four partial-scan cameras aboard Ranger VII.

NASA SP-63
N65-33848
Avail NTIS

235 pp
1965

Progress in Development of Methods in Bone Densitometry

*D. W. Jenkins, W. F. Neumann,
G. D. Whedon*

Determining thickness and mineral content in vertebra and other bones by x-ray and other densitometry, application of techniques to human studies. Conference, March 1965.

NASA SP-64
N66-17666
Avail NTIS

199 pp
1966

Space Technology. Volume I: Spacecraft Systems

L. H. Abraham

Spacecraft systems, aerodynamics, power plants, loads, propellant tank design.

NASA SP-65
N65-24625
Avail NTIS

82 pp
1965

Space Technology. Volume II: Spacecraft Mechanical Engineering

J. L. Adams

Spacecraft design and mechanical engineering.

NASA SP-66
N65-24626
Avail NTIS

169 pp
1965

Space Technology. Volume IV: Spacecraft Guidance and Control

J. R. Scull

Spacecraft control, navigation, and guidance.
NASA SP-68
N67-16059
Avail NTIS

140 pp
1966

Space Technology. Volume V: Telecommunications

J. J. Stiffler

Improved data handling and pulse modulation systems for space telecommunication.

NASA SP-69
N67-16555
Avail NTIS

148 pp
1966

Proceedings of the Conference on Space Nutrition and Related Waste Problems

T. C. Helvey

Conference, April 1964.
NASA SP-70
N65-18566
Avail NTIS

408 pp
1964

Proceedings of Second Symposium on Protection Against Radiation in Space

A. Reetz, Jr.

Symposium, October 1964.
NASA SP-71
N65-34575
Avail NTIS

519 pp
1965

Symposium on the Analysis of Central Nervous System and Cardiovascular Data Using Computer Methods

W. R. Adey, L. D. Proctor

Symposium, October 1964.
NASA SP-72
N65-28750
Avail NTIS

492 pp
1965

The Nature and Scope of the NASA University Program

T. L. K. Smull

NASA SP-73
N65-28332
Avail NTIS

41 pp
1965

Survey of the Literature of the Solar Constant and the Spectral Distribution of Solar Radiant Flux

M. P. Tbekeakara

Solar constant, spectral distribution of solar radiant flux, solar radiation laws and simulation, spacecraft thermal balance, and radiation measurement scale.

NASA SP-74
N65-22362
Avail NTIS

47 pp
1965

An Analysis of the Extraterrestrial Life Detection Problem

*R. D. Johnson, R. B. Painter,
R. S. Young*

NASA SP-75
N65-34227
Avail NTIS

36 pp
1965

Final Report on the Relay I Program

Relay I satellite program to carry out communications experiments with spacecraft, to detect radiation particles in Van Allen belt, and to determine radiation damage to components.

NASA SP-76
N66-10226
Avail NTIS

749 pp
1965

First Conference on the Role of the Vestibular Organs in the Exploration of Space

Role of vestibular apparatus, semicircular canals, and otolith organs in space explorations. Symposium, January 1965.

NASA SP-77
N66-16106
Avail NTIS

376 pp
1965

The Meteoroid Environment and Its Effects on Materials and Equipment

W. A. Cosby, R. G. Lyle

Hypervelocity impact phenomena.

NASA SP-78
N66-14158
Avail NTIS

119 pp
1965

Electrical Power Generation Systems for Space Applications

Current and predicted state of the art of solar, chemical, and nuclear systems.

NASA SP-79
N65-25272
Avail NTIS

42 pp
1965

Short-Term Frequency Stability

Panel discussion on frequency stability measurement techniques. Symposium, November 1964.

NASA SP-80
N66-10381
Avail NTIS

296 pp
1965

Summary Report on the NASA University Program Review Conference

D. J. Montgomery

Nature, conduct, results, and impact of the program. Conference, March 1965.

NASA SP-81
N65-28249
Avail NTIS

42 pp
1965

Proceedings of the Fifth National Conference on the Peaceful Uses of Space

Space research impact on national economy and industry, communications, education, and science and technology. Conference, May 1965.

NASA SP-82
N66-30366
Avail NTIS

212 pp
1966

Conference on Aircraft Operating Problems

Conference on aircraft operational problems of general, supersonic, V/STOL and STOL aircraft. May 1965.

NASA SP-83
N65-31100
Avail NTIS

335 pp
1965

Bioenergetics of Space Suits for Lunar Exploration

E. M. Roth

Literature review.

NASA SP-84
N66-27235
Avail NTIS

145 pp
1966

NASA University Program Review Conference

Training, research, space flight, technology, facilities, and experimentation. Conference, March 1965.

NASA SP-85
N66-12401
Avail NTIS

375 pp
1965

Medical Aspects of an Orbiting Research Laboratory

S. P. Vinograd

Life support system recommendations, human reaction to medical experiments for orbital research laboratory. Space Medicine Advisory Group Study, August 1964.

NASA SP-86
N66-33199
Avail NTIS

152 pp
1966

Proceedings of the Apollo Unified S-Band Technical Conference

Tracking and communications system for Apollo spacecraft at lunar distances using S-band. Conference, July 1965.

NASA SP-87
N65-35476
Avail NTIS

277 pp
1965

**NASA 1965 Summer Conference on
Lunar Exploration and Science**

Overall program for lunar exploration missions, role of various scientific disciplines in early Apollo missions, manned lunar orbiter and surface expeditions, post-Apollo programs. Conference, July 1965.

NASA SP-88
N66-14826 448 pp
Avail NTIS 1965

**Observations From the Nimbus I
Meteorological Satellite**

NASA SP-89
N66-12130 92 pp
Avail NTIS 1965

**Progress of the X-15 Research Airplane
Program**

Conference, October 1965.

NASA SP-90
N73-71303 133 pp
Avail NTIS 1965

**Significant Achievements in Space
Astronomy, 1958-1964**

Space astronomy developments in x-ray, gamma-ray, ultraviolet, infrared, and low-frequency radio spectra.

NASA SP-91
N66-34786 71 pp
Avail NTIS 1966

**Significant Achievements in Space
Bioscience, 1958-1964**

Research in exobiology, environmental biology, behavioral biology, molecular biology and bioinstrumentation, space flight programs, and manned space flight.

NASA SP-92
N66-17778 142 pp
Avail NTIS 1966

**Significant Achievements in Space
Communications and Navigation,
1958-1964**

Reasons for and advantages of communications and navigation satellites.

NASA SP-93
N66-18458 73 pp
Avail NTIS 1966

**Significant Achievements in Satellite
Geodesy, 1958-1964**

Satellite observations in geodetic surveying.

NASA SP-94
N66-37346 178 pp
Avail NTIS 1966

**Significant Achievements in Ionospheres
and Radio Physics, 1958-1964**

E. R. Schmerling

NASA SP-95
N66-22936 68 pp
Avail NTIS 1966

**Significant Achievements in Satellite
Meteorology, 1958-1964**

Meteorological satellite and sounding rocket configurations and instrumentation, cloud photography, radiometry, data acquisition and processing.

NASA SP-96
N66-19523 148 pp
Avail NTIS 1966

**Significant Achievements in Particles
and Fields, 1958-1964**

Explorer satellite and Mariner space probe data on solar wind, radiation belts, trapped particles, geomagnetic field, cosmic rays, and neutrons.

NASA SP-97
N66-19524 99 pp
Avail NTIS 1966

**Significant Achievements in Planetary
Atmospheres, 1958-1964**

Planetary and Earth atmospheric composition, temperature, and activity data from satellites and sounding rockets.

NASA SP-98
N66-19525 65 pp
Avail NTIS 1966

**Significant Achievements in Planetol-
ogy, 1958-1964**

Terrestrial observations of lunar and planetary electromagnetic radiation and chemical-mineralogical composition, and space probe data and instrumentation.

NASA SP-99
N66-23475 81 pp
Avail NTIS 1964

**Significant Achievements in Solar
Physics, 1958-1964**

Solar soft x-ray and ultraviolet mapping, hard x-ray emission, corona, satellite monitored radiation, and instrumentation study summaries for solar physics.

NASA SP-100
N66-25003 106 pp
Avail NTIS 1966

Conference on Langley Research Related to Apollo Mission	Proceedings of a Symposium on Passive Gravity-Gradient Stabilization
Heating and thermal protection, landing dynamics, spacecraft simulation. Conference, June 1965.	Passive gravity-gradient stabilization systems for satellites. Symposium, May 1965.
NASA SP-101 N72-71553 Avail NTIS	NASA SP-107 N66-36326 Avail NTIS
413 pp 1965	291 pp 1966
Philosophy of Simulation in a Man-Machine Space Mission System	Spacecraft Sterilization Technology
<i>T. M. Fraser</i> Nature of simulation; prerequisites for simulation; fidelity, realism, and transfer of training; use of manned simulators.	Spacecraft sterilization requirements, microbiological contamination control, sterilization techniques. Conference, November 1965.
NASA SP-102 N66-27236 Avail NTIS	NASA SP-108 N67-14761 Avail NTIS
116 pp 1966	601 pp 1966
Human Responses to Sustained Acceleration	Development of Small Animal Payload and Integration with a Sounding Rocket
<i>T. M. Fraser</i> Review and bibliography of human response to sustained acceleration.	<i>L. J. Early</i>
NASA SP-103 N66-27319 Avail NTIS	NASA SP-109 N66-33540 Avail NTIS
137 pp 1966	110 pp 1966
Proceedings of a Conference on Theoretical Biology	Involuntary Hypohydration in Man and Animals: A Review
<i>G. J. Jacobs</i> Cell synthesis and ecology. Conference, November 1963.	<i>J. E. Greenleaf</i>
NASA SP-104 N66-30395 Avail NTIS	NASA SP-110 N66-23622 Avail NTIS
211 pp 1966	38 pp 1966
Vacuum Technology and Space Simulation	Ranger VIII Photographs of the Moon: Cameras "A," "B," and "P"
<i>D. H. Holkeboer, D. W. Jones, F. Pagano, et al.</i> Nomenclature, pressure, pressure gauges, pumping speed and systems, cryogenic pumping, gas load, outgassing of materials, leak detection, gas flow in components and systems, space simulation and vacuum systems.	Lunar photographs taken by Ranger VIII and photographic data tables.
NASA SP-105 N66-36129 Avail GPO	NASA SP-111 N66-25366 Avail GPO
331 pp 1966	478 pp 1966
The Dynamic Behavior of Liquids in Moving Containers	Ranger IX Photographs of the Moon: Cameras "A," "B," and "P"
<i>H. N. Abramson</i> Dynamic behavior of liquids in moving containers with applications to propellants in space vehicle fuel tanks.	Ranger IX photographs of crater Alphonsus on lunar surface.
NASA SP-106 N67-15884 Avail NTIS	NASA SP-112 N66-26555 Avail NTIS
479 pp 1966	193 pp 1966
Dynamic Stability of Rotor-Bearing Systems	Dynamic Stability of Rotor-Bearing Systems
	<i>E. J. Gunter, Jr.</i>
	NASA SP-113 N67-11942 Avail NTIS
	234 pp 1966

Space Technology. Volume VI: Space Sciences

T. A. Farley

Geomagnetism, solar and galactic cosmic rays, comets, influence on Earth environment.

NASA SP-114
N67-18141
Avail NTIS

90 pp
1966

Second Symposium on the Role of the Vestibular Organs in Space Exploration

Vestibular changes, human equilibrium and orientation, adaptation of gravitoinertial receptor mechanisms during space missions. Symposium, January 1966.

NASA SP-115
N67-15121
Avail NTIS

315 pp
1966

Conference on V/STOL and STOL Aircraft

Aerodynamic and performance characteristics, handling qualities, and propulsion systems for STOL, VTOL, and V/STOL aircraft. Conference, April 1966.

NASA SP-116
N66-24606
Avail NTIS

461 pp
1966

Space Cabin Atmospheres. Part III: Physiological Factors of Inert Gases

E. M. Roth

NASA SP-117
N67-22878
Avail NTIS

135 pp
1967

Space Cabin Atmospheres. Part IV: One- Versus Multiple-Gas Systems

E. M. Roth

Physiological factors, hardware, and environmental control tradeoffs for one and two gas systems of space cabin atmospheres.

NASA SP-118
N67-29998
Avail NTIS

138 pp
1967

Ariel I: The First International Satellite. Experimental Results

Structural design, experimental data, tracking.

NASA SP-119
N67-16514
Avail NTIS

163 pp
1966

Fuel Cells

L. G. Austin

Review of government-sponsored fuel cell research, 1950-1964.

NASA SP-120
N67-40137
Avail NTIS

451 pp
1967

Gemini Midprogram Conference

Spacecraft and launch vehicle development and performance, flight operations, mission results, physical science and biomedical experiments. Conference, February 1966.

NASA SP-121
N66-29626
Avail NTIS

417 pp
1966

Summary Report on the NASA-Western University Conference

D. E. Cunningham

Conference, November 1965.

NASA SP-122
N67-11943
Avail NTIS

55 pp
1966

Nuclear Rocket Technology Conference

Graphite nuclear rocket and tungsten water-moderated nuclear rocket. Conference, April 1966.

NASA SP-123
N73-70969
Avail NTIS

325 pp
1966

Conference on Aircraft Aerodynamics

Experimental techniques; stability and control; propulsion aerodynamics; subsonic, supersonic, and transonic aerodynamics. Conference, May 1966.

NASA SP-124
N75-71754
Avail NTIS

611 pp
1966

Design of Liquid Propellant Rocket Engines

D. H. Huang, D. K. Huzel

Parameters for design of rocket engines and systems.

NASA SP-125
N71-29405
Avail NTIS

461 pp
1971

Surveyor I: A Preliminary Report

Surveyor I preliminary data on lunar surface mechanical, thermal, and electrical properties, topography, and geology.

NASA SP-126
N66-29481
Avail NTIS

50 pp
1966

Astronomy in Space

*G. E. Mueller, H. E. Newell,
N. G. Roman, et al.*

NASA space science astronomy program: orbiting satellite experiments for solar, stellar, and galactic observations.

NASA SP-127
N67-18730
Avail NTIS

67 pp
1967

Second Annual NASA-University Conference on Manual Control

Discrete and continuous models, multi-variable and adaptive control, information theory, design methods. Conference, March 1966.

NASA SP-128
N67-15850
Avail NTIS

422 pp
1966

Earth Photographs From Gemini III, IV, and V

Earth color photographs from Gemini III, IV, and V indicating terrain features and cloud systems.

NASA SP-129
N67-26641
Avail GPO

262 pp
1967

A Review of the Mariner IV Results

O. W. Nicks

Data on Mars, solar system, and interplanetary space flight.

NASA SP-130
N67-31356
Avail NTIS

42 pp
1967

Space Power Systems Advanced Technology Conference

Chemical and nuclear power, reactor heat sources, and power conversion. Conference, August 1966.

NASA SP-131
N67-10261
Avail NTIS

295 pp
1966

Aerospace Measurement Techniques

G. G. Mannella

Advanced aerospace technology measurement techniques and instrumentation. Symposium, July 1966.

NASA SP-132
N67-17781
Avail NTIS

280 pp
1967

Scientific Satellites

Equipment, instrumentation, communications, design, launch vehicles, and guidance of scientific satellites.

NASA SP-133
N68-14965
Avail GPO

828 pp
1967

Conference on the Closed Life Support System

Water purification, waste disposal, and food synthesis for space flights. Conference, April 1966.

NASA SP-134
N67-34583
Avail NTIS

231 pp
1967

Meteor Orbits and Dust: Proceedings of a Symposium

G. S. Hawkins

Concentrations and orbital calculations of meteors and meteoritic and extraterrestrial dust particles. Symposium, August 1965.

NASA SP-135
N67-32038
Avail NTIS

437 pp
1967

Significant Achievements in Space Science, 1965

H. E. Newell

NASA SP-136
N67-19022
Avail NTIS

222 pp
1967

Significant Achievements in Space Applications, 1965

Space satellite application in communications, navigation, geodesy, and meteorology.

NASA SP-137
N67-18724
Avail NTIS

91 pp
1966

Gemini Summary Conference

Rendezvous, docking, extravehicular activity, experiment results. Conference, February 1967.

NASA SP-138
N68-14941
Avail NTIS

335 pp
1967

Mariner-Mars 1964: Final Project Report

Mariner-Mars 1964 mission accomplishments.

NASA SP-139
N68-18743
Avail NTIS

356 pp
1967

Interstellar Grains

J. M. Greenberg, T. P. Roark

Observational and theoretical interpretations of interstellar grains. Conference, August 1965.

NASA SP-140
N68-11456
Avail GPO

275 pp
1967

First Compilation of Papers on Trajectory Analysis and Guidance Theory

Mathematical models to approximate functions, bounds and power series for three-body problems, satellite orbit theories, and other aspects of trajectory analysis and guidance theory.

NASA SP-141
N67-29370
Avail NTIS

227 pp
1967

A Survey of Space Applications

NASA program for application of space science and technology to public sector.

NASA SP-142
N67-23338 140 pp
Avail GPO 1967

Oxide Dispersion Strengthened Alloys

N. J. Grant, R. W. Hall, H. J. Siegel
State-of-the-art survey on oxide dispersion strengthened alloys for use as high temperature materials.

NASA SP-143
N67-37477 30 pp
Avail NTIS 1967

Third Annual NASA-University Conference on Manual Control

Display devices, function models, decision processes, physiological modeling, computer processing of manual control records. Conference, March 1967.

NASA SP-144
N68-15901 435 pp
Avail NTIS 1967

A Survey of Attitude Sensors for Spacecraft

N. M. Hatchett
Spacecraft attitude sensors design and operational features, horizon scanners, solar sensors, star trackers, space sextants, and map matchers.

NASA SP-145
N67-31296 21 pp
Avail NTIS 1967

Surveyor III: A Preliminary Report

Preliminary observations from Surveyor III soft Moon landing, telemetered pictures and data on mechanical soil sampler, lunar surface properties.

NASA SP-146
N67-32582 170 pp
Avail NTIS 1967

Sonic Boom Research

A. R. Seebass
Conference, April 1967.

NASA SP-147
N68-21413 115 pp
Avail NTIS 1967

Conference on Hypersonic Aircraft Technology

Mission studies, configuration aerodynamics, hypersonic viscous flow, propulsion, structures and materials. Conference, May 1967.

NASA SP-148
N74-73049 591 pp
Avail NTIS 1967

Summary of Gemini Extravehicular Activity

R. M. Macbell

NASA SP-149
N68-15891 336 pp
Avail NTIS 1967

The Zodiacal Light and the Interplanetary Medium

J. L. Weinberg

Photometric and meteor observations, scattering properties, particle collection and impact, solar wind, and origin and evolution of zodiacal light in interplanetary medium. Conference, February 1967.

NASA SP-150
N68-27475 395 pp
Avail NTIS 1967

Relay Program Final Report

Summary of operation, communications, and other experiments of Relay II satellite.

NASA SP-151
N69-21065 368 pp
Avail GPO 1968

Third Symposium on the Role of the Vestibular Organs in Space Exploration

Symposium, January 1967.

NASA SP-152
N68-29128 437 pp
Avail NTIS 1968

Symposium on Computer Simulation of Plasma and Many-Body Problems

Plasma physics, Vlasov theory, astrophysics, magnetohydrodynamics, many-body problems, and computer simulation. Symposium, April 1967.

NASA SP-153
N67-37737 465 pp
Avail NTIS 1967

Aerospace Electronic Systems Technology: A Briefing for Industry

Conference, May 1967.

NASA SP-154
N68-33169 319 pp
Avail NTIS 1967

Significant Achievements in Space Science, 1966

Advances in astronomy, exobiology, ionospheric sciences, radio and solar physics, planetary atmospheres, and planetology.

NASA SP-155
N68-15748 224 pp
Avail GPO 1967

Significant Achievements in Space Applications, 1966

R. H. McQuain

Achievements of application technology satellites, communication satellites, navigation and traffic control satellite program, weather satellites, and satellite geodesy.

NASA SP-156

N68-16015

97 pp

Avail NTIS

1967

1967 Summer Study of Lunar Science and Exploration

W. N. Hess

Future of lunar manned and unmanned exploration and Apollo applications program.

NASA SP-157

N67-40564

405 pp

Avail NTIS

1967

The Potential Applications of Satellite Geodetic Techniques to Geosciences

Potential applications of geodetic satellites to geology, oceanography, glaciology, and atmospheric physics.

NASA SP-158

N68-18902

26 pp

Avail NTIS

1968

Recent Advances in Display Media

Properties and imaging techniques of various display devices: computer-directed visual flight control boards, integrated optical man-machine systems, and electro-optical methods. Symposium, September 1967.

NASA SP-159

N68-22302

129 pp

Avail NTIS

1963

Vibration of Plates

A. W. Leissa

Tabulated numerical results of theories of plate vibration.

NASA SP-160

N70-18461

360 pp

Avail GPO

1969

Biology of Hard Tissue: Proceedings of the Second Conference

A. M. Buday

Bone diseases and regeneration, cellular differentiation, and homeostasis of calcium. Conference, March 1966.

NASA SP-161

N69-10444

399 pp

Avail GPO

1968

Objectives and Goals in Space Science and Applications, 1968

J. E. Naugle

Objectives, current programs, and future mission options in space sciences and applications.

NASA SP-162

N69-13844

97 pp

Avail GPO

1968

Surveyor V: A Preliminary Report

Configuration, television picture transmission, and experiments on measuring chemical elements in lunar surface.

NASA SP-163

N68-17844

162 pp

Avail NTIS

1967

Thermal Radiation Heat Transfer

J. R. Howell, R. Siegel

Volume 1. The Blackbody, Electromagnetic Theory, and Material Properties

NASA SP-164

N68-28530

194 pp

Avail NTIS

1968

Volume II. Radiation Exchange Between Surfaces and in Enclosures

NASA SP-164

N69-30317

290 pp

Avail GPO

1969

Volume III. Radiation Transfer With Absorbing, Emitting, and Scattering Media

NASA SP-164

N71-30941

362 pp

Avail GPO

1971

Bioregenerative Systems

Bioregenerative life support systems for long duration space flights; hydrogenomas biosynthesis and algae photosynthesis processes. Conference, November 1966.

NASA SP-165

N68-26207

152 pp

Avail NTIS

1968

Surveyor VI: A Preliminary Report

Surveyor VI scientific data analysis.

NASA SP-166

N68-21443

173 pp

Avail NTIS

1968

Significant Achievements in Space Science, 1967

Stellar astronomy, bioscience, ionospheres, planetology, particles and fields, solar physics, and planetary atmospheres.

NASA SP-167

N69-25460

548 pp

Avail GPO

1968

Exploring Space With a Camera

E. M. Cortright

Spaceborne photography of cloud cover and other meteorological phenomena, Surveyor and Orbiter lunar shots, and Gemini space walk and target docking.

NASA SP-168
N68-34870 227 pp
Avail GPO 1968

Protection Against Space Radiation

K. Obrien, A. Reetz, Jr.

Space radiation transport, spacecraft shielding design and advanced concepts, and methods for calculating radiation penetration through protective shields. Conference, June 1967.

NASA SP-169
N68-26128 627 pp
Avail NTIS 1968

Numerical Analysis

R. H. Wilson, Jr.

Numerical analysis applications to aerospace and related problems. Conference, January 1968.

NASA SP-170
N68-33245 46 pp
Avail NTIS 1968

Earth Photographs From Gemini VI Through XII

Color photographs of Earth taken during Gemini flights VI through XII.

NASA SP-171
N69-28909 335 pp
Avail GPO 1968

Batteries for Space Power Systems

P. Bauer

NASA development work on high efficiency batteries for space electric power systems.

NASA SP-172
N69-18042 314 pp
Avail NTIS 1968

Surveyor VII: A Preliminary Report

Principal scientific results on Surveyor VII lunar mission.

NASA SP-173
N68-33553 304 pp
Avail NTIS 1968

Conference on Electromagnetic Exploration of the Moon: June 11-13, 1968. Report of the Program Evaluation Committee

Proposed electromagnetic exploration of Moon. Conference, June 1968.

NASA SP-174
N69-33595 27 pp
Avail NTIS 1969

EXAMETNET Data Report Series

Annual Report, 1966

Rocket sounding meteorological data of EXAMETNET for 1966.

NASA SP-175
N69-16214 190 pp
Avail NTIS 1968

EXAMETNET Data Report Series

Annual Report, 1967

EXAMETNET meteorological rocket launchings and data dissemination, with tables.

NASA SP-176
N69-22570 188 pp
Avail NTIS 1969

Proceedings of the Working Group on Extraterrestrial Resources

Lunar environment, bases, exploration, and extraterrestrial resources. Conference, February 1968.

NASA SP-177
N69-22226 247 pp
Avail NTIS 1968

Langley, Ames, Lewis, and Flight Research Center Support of DOD VFAX/FX Projects Progress Report

NASA SP-178
X70-11968 186 pp
1968

The Book of Mars

S. Glassstone

Observations and theoretical studies of Mars properties.

NASA SP-179
N69-16571 307 pp
Avail GPO 1968

Second Conference on Sonic Boom Research

I. R. Schwartz

Sonic boom reduction in supersonic transport flight. Shock wave propagation and refraction, prediction methods for acoustic attenuation, aerodynamic engineering aspects. Conference, May 1968.

NASA SP-180
N68-34907 218 pp
Avail NTIS 1968

Interdisciplinary Approach to Friction and Wear

P. M. Ku

Structure, interactions, and topography of solid surfaces, sliding friction, adhesion, wear, and boundary lubrication. Conference, November 1967.

NASA SP-181
N69-30401 489 pp
Avail GPO 1968

Problems and Programs on the Use of Submillimeter Waves in Space

M. R. Nagel

Uses of submillimeter waves in aerospace technology, with bibliography.

NASA SP-182
N68-35522
Avail NTIS

49 pp
1968

Some Fluid Mechanical Problems Related to Subsonic and Supersonic Aircraft

J. T. Howe

NASA SP-183
N69-10693
Avail NTIS

24 pp
1968

Surveyor: Program Results

Summary of lunar data and scientific observations generated by Surveyor landings on Moon.

NASA SP-184
N69-36451
Avail GPO

432 pp
1969

A Study of NASA University Programs

NASA university programs in personnel training, aeronautics and space research, and laboratories and research centers.

NASA SP-185
N68-35564
Avail NTIS

85 pp
1968

Theories of Equilibrium Figures of a Rotating Homogeneous Fluid Mass

Y. Hagibara

Theory of equilibrium figures of rotating, homogeneous, incompressible fluid mass as applied to cosmology.

NASA SP-186
N71-33591
Avail GPO

174 pp
1970

Fourth Symposium on the Role of the Vestibular Organs in Space Exploration

Etiology, symptomatology, and treatment of motion sickness with respect to vestibular organ and related neurological functions. Symposium, September 1968.

NASA SP-187
N70-30699
Avail GPO

393 pp
1970

CO₂: Chemical, Biological, and Physiological Aspects

J. T. Edsall, R. E. Forster,

A. B. Otis, et al.

Molecular structure of carbonic anhydrase, enzymatic carboxylation, and respiratory gas exchange.

NASA SP-188
N70-23290
Avail GPO

242 pp
1969

Progress of NASA Research Relating to Noise Alleviation of Large Subsonic Jet Aircraft

Nacelle acoustic linings, sound generation in jet engines, operational noise effects on humans. Conference, October 1968.

NASA SP-189
N69-11542
Avail NTIS

691 pp
1968

Mariner-Venus, 1967: Final Project Report

Results and tracking and data acquisition for Mariner-Venus 1967 and Mariner-Venus 1967 extension projects.

NASA SP-190
N72-20809
Avail GPO

310 pp
1971

Average Evoked Potentials: Methods, Results, and Evaluations

E. Donchin, D. B. Lindsley

Methods, results, and evaluation of research in average evoked potentials. Conference, September 1968.

NASA SP-191
N70-16876
Avail GPO

410 pp
1969

Fourth Annual NASA-University Conference on Manual Control

Mathematical models of human performance in manual control of man-machine systems. Conference, March 1968.

NASA SP-192
N70-14876
Avail NTIS

573 pp
1969

Evaluation of Motion-Degraded Images

Optical filters and digital methods for blurring removal from photographic imagery. Conference, December 1968.

NASA SP-193
N69-33322
Avail GPO

178 pp
1969

Liquid Propellant Rocket Combustion Instability

D. T. Harrje

Combustion instability in liquid propellant rocket engines.

NASA SP-194

N72-33729

Avail GPO

659 pp

1972

Significant Accomplishments in Science: Goddard Space Flight Center, 1968

Investigation of Earth atmospheric composition, geomagnetism, extraterrestrial radiation, solar activity, and planetary atmospheres by satellite experiment and astronomical observations. Symposium, January 1969.

NASA SP-195

N69-38951

Avail NTIS

196 pp

1969

NASA Science and Technology Advisory Committee for Manned Space Flight: Proceedings of the Winter Study on Uses of Manned Space Flight 1975-1985

Manned space flight capabilities for lunar and planetary explorations and Earth orbiting stations.

Volume 1. Proceedings

NASA SP-196

N69-22510

Avail NTIS

45 pp

1969

Volume II. Appendices

NASA SP-196

N70-17026

Avail NTIS

177 pp

1969

Lunar Orbiter I, Preliminary Results: Lunar Terrain Assessment and Selenodesy, Micrometeoroid, and Radiation Data

G. W. Brewer, J. K. Hughes

Lunar Orbiter I terrain assessment photographs and preliminary selenodesy, micrometeoroid, and radiation data.

NASA SP-197

N69-39213

Avail NTIS

147 pp

1969

Atlas of Cometary Forms: Structures Near the Nucleus

B. Donn, J. Rabe, K. Wurm

Atlas of drawings and photographs of comets.

NASA SP-198

N70-12260

Avail GPO

135 pp

1969

Lectures in High-Energy Astrophysics

H. B. Oegelman, J. R. Wayland, Jr.

High-energy cosmic radiation problems.

NASA SP-199

N69-29652

Avail NTIS

170 pp

1969

The Moon as Viewed by Lunar Orbiter

F. El-Baz, L. J. Kosofsky

Selected compilation of Lunar Orbiter photographs showing salient features of lunar surface.

NASA SP-200

N70-30817

Avail GPO

156 pp

1970

Analysis of Apollo 8 Photography and Visual Observations

Apollo 8 observations of lunar topography.

NASA SP-201

N70-14366

Avail GPO

403 pp

1969

Aerospace Food Technology

Operational and technological problems of improvement in space flight feeding for future manned space missions. Conference, April 1969.

NASA SP-202

N70-33835

Avail NTIS

215 pp

1970

Introduction to Abstract Analysis

M. E. Goldstein, B. M. Rosenbaum

Introduction to abstract analysis by definitions and proofs.

NASA SP-203

N70-21801

Avail GPO

257 pp

1969

The Experiments of Biosatellite II

J. F. Saunders

Experiments with invertebrates, plants, and cellular systems on Biosatellite II flight.

NASA SP-204

N72-20048

Avail GPO

358 pp

1971

Biotechnology

Biotechnological problems on man-machine systems required for long duration space flights. Conference, August 1967.

NASA SP-205

N71-28526

Avail GPO

283 pp

1971

Lunar Orbiter Photographic Atlas of the Moon

D. E. Bowker, J. K. Hughes

Atlas of reconstructed lunar photographs taken by Lunar Orbiters during 1966 and 1967.

NASA SP-206
N73-13879
Avail GPO

723 pp
1971

Basic Aerodynamic Noise Research

I. R. Schwartz

Aerodynamic noise related to aircraft propulsion systems. Conference, July 1969.

NASA SP-207
N70-22850
Avail GPO

540 pp
1969

The Prevention of Electrical Breakdown in Spacecraft

D. Burrowbridge, F. W. Paul

NASA SP-208
N70-18656
Avail NTIS

103 pp
1969

Applications of Research on Human Decision Making

*R. M. Patton, J. A. Swets,
T. A. Tanner, Jr.*

Human decision making in manned space flight including topics of memory models, signal detection, and pilot performance. Symposium, February 1968.

NASA SP-209
N70-22743
Avail GPO

198 pp
1970

Electric Propulsion Mission Analysis Nomenclature and Terminology

Terminology for establishing system parameters of electric propulsion mission analysis.

NASA SP-210
N70-11179
Avail NTIS

15 pp
1969

Future Fields of Control Application

Application of control theory to production engineering, transportation systems, urban development, biological oceanography, mass communications, and socio-economic problems. Conference, February 1969.

NASA SP-211
N69-39957
Avail NTIS

144 pp
1969

Progress of NASA Research on Warm Fog Properties and Modification Concepts

Research on warm fog properties and dispersal concepts. Symposium, February 1969.

NASA SP-212
N69-39526
Avail NTIS

127 pp
1969

A Long-Range Program in Space Astronomy: Position Paper of the Astronomy Missions Board

R. O. Doyle

Potential for advancement of astronomy by space programs.

NASA SP-213
N69-41150
Avail GPO

316 pp
1969

Apollo 11: Preliminary Science Report

Preliminary scientific observations of Apollo 11 mission.

NASA SP-214
N70-10030
Avail NTIS

209 pp
1969

Fifth Annual NASA-University Conference on Manual Control

Studies on display systems, optimal control methods, human performance theory, and neuromuscular models. Conference, March 1969.

NASA SP-215
N70-30877
Avail NTIS

720 pp
1970

Compressible Turbulent Boundary Layers

Compressibility of turbulent boundary layers: skin friction, heat transfer, flow velocity, temperature distribution, pressure gradients, and aerodynamic drag prediction methods. Conference, December 1968.

NASA SP-216
N70-10426
Avail NTIS

572 pp
1969

Optical Space Communication

S. Karp, R. S. Kennedy

Results of workshop on optical communication systems for space applications.

NASA SP-217
N70-18087
Avail NTIS

154 pp
1969

Analysis of a Jet in a Subsonic Crosswind

Jet exhaust flow effects on aerodynamic characteristics of V/STOL aircraft during transition flight. Conference, September 1969.
NASA SP-218
N70-11826
Avail NTIS

242 pp
1969

Status of Passive Inflatable Falling-Sphere Technology for Atmospheric Sensing to 100 km

Symposium, September 1969.
NASA SP-219
N70-18570
Avail NTIS

307 pp
1969

NASA Acoustically Treated Nacelle Program

Program to reduce jet aircraft noise. Conference, October 1969.
NASA SP-220
N70-13901
Avail NTIS

160 pp
1969

The NASTRAN Theoretical Manual

R. H. MacNeal

Finite element computer program for structural analysis.
NASA SP-221
N70-42934
Avail COSMIC

480 pp
1970

The NASTRAN Theoretical Manual (Level 15.0)

NASA SP-221 (01)
N72-29920
Avail COSMIC

601 pp
1972

The NASTRAN Theoretical Manual (Level 16)

NASA SP-221 (03)
N76-73931
Avail COSMIC

751 pp
1976

The NASTRAN Theoretical Manual (Level 17)

NASA SP-221 (04)
Avail COSMIC

1979

The NASTRAN User's Manual

C. W. McCormick

User manual for NASA structural analysis program to describe structural modeling techniques and computer programming operations.

NASA SP-222
N70-41755
Avail COSMIC

812 pp
1970

The NASTRAN User's Manual (Level 15.0)

NASA SP-222 (01)
N72-29921
Avail COSMIC

1540 pp
1973

The NASTRAN User's Manual (cont.)

The NASTRAN User's Manual (Level 16)

NASA SP-222 (03)
N76-73933
Avail COSMIC

1240 pp
1976

The NASTRAN User's Manual (Level 17)

NASA SP-222 (04)
N80-26694
Avail COSMIC

867 pp
1979

The NASTRAN User's Manual (Level 17.5)

NASA SP-222 (05)
Avail COSMIC

1980

The NASTRAN Programmer's Manual

F. J. Douglas

Digital computer programs for analysis of large complex structures.

NASA SP-223
N70-43143
Avail COSMIC

1514 pp
1970

The NASTRAN Programmer's Manual (Level 15.0)

NASA SP-223 (01)
N73-17892
Avail COSMIC

2309 pp
1972

The NASTRAN Programmer's Manual (Level 16)

NASA SP-223 (03)
N78-29505
Avail COSMIC

3444 pp
1976

The NASTRAN Demonstration Problem Manual

NASA SP-224
N70-41756
Avail COSMIC

134 pp
1970

The NASTRAN Demonstration Problem Manual (Level 15.0)

NASA SP-224 (01)
N72-39919
Avail COSMIC

187 pp
1972

The NASTRAN Demonstration Problem Manual (Level 16)

NASA SP-224 (03)
N76-74317
Avail COSMIC

259 pp
1976

The NASTRAN Demonstration Problem Manual (Level 17.5)

NASA SP-224 (05)
Avail COSMIC

1980

Mariner-Mars 1969: A Preliminary Report

Scientific data from Mariner 6 and 7 Mars flyby missions during 1969.

NASA SP-225
N70-18343
Avail NTIS

148 pp
1969

Plasmas and Magnetic Fields in Propulsion and Power Research	Optical Telescope Technology
Conference, October 1969.	Design optics and technology for large space-borne astronomical telescopes. Workshop, May 1969.
NASA SP-226	NASA SP-233
N70-18726	N70-36676
Avail NTIS	Avail NTIS
253 pp	795 pp
1970	1970
Aerospace Structural Materials	Portable Life Support Systems
Development of aerospace structural materials: heat-resistant alloys, refractory materials, transition metals, and composite materials. Conference, November 1969.	Portable life support and environmental control systems. Conference, May 1969.
NASA SP-227	NASA SP-234
N70-20860	N70-28501
Avail NTIS	Avail NTIS
334 pp	380 pp
1970	1970
Analytic Methods in Aircraft Aerodynamics	Apollo 12: Preliminary Science Report
Analysis of aircraft aerodynamic characteristics. Symposium, October 1969.	Preliminary scientific analyses of Apollo 12 ALSEP data, lunar photographs, and returned materials.
NASA SP-228	NASA SP-235
N70-21351	N70-35271
Avail NTIS	Avail NTIS
750 pp	235 pp
1970	1970
Proceedings of the 7th Annual Meeting of the Working Group on Extraterrestrial Resources	Research on Uranium Plasmas and Their Technological Applications
Lunar water detection and removal, soil adhesion and friction, and other lunar and planetary resources recovery. Conference, July 1969.	<i>R. T. Schneider, K. Thom</i> Uranium plasmas applied to nuclear rocket engines, MHD generators, nuclear lasers, and plasma stability and flow. Symposium, January 1970.
NASA SP-229	NASA SP-236
N70-39276	N71-33626
Avail GPO	Avail GPO
148 pp	503 pp
1970	1971
Ecological Surveys from Space	Interdisciplinary Approach to the Lubrication of Concentrated Contacts
Spaceborne photography using different combinations of film and filters for Earth resources surveys.	<i>P. M. Ku</i> Lubrication, wear, and design aspects of rolling contact bearings. Symposium, July 1969.
NASA SP-230	NASA SP-237
N70-26981	N71-26826
Avail GPO	Avail GPO
80 pp	595 pp
1970	1970
EXAMETNET Data Report Series Annual Report, 1968	Apollo 11 Mission Report
Meteorological rocket launchings and data dissemination for 1968 from EXAMETNET.	Apollo 11 postflight analysis and mission report.
NASA SP-231	NASA SP-238
N70-29741	N71-25042
Avail NTIS	Avail NTIS
184 pp	228 pp
1970	1970
Analysis of Apollo 10 Photography and Visual Observations	Kinetics and Thermodynamics in High-Temperature Gases
Lunar geology, crater, and volcanic feature analysis from Apollo 10 visual observations and photo interpretations.	Conference on kinetics and thermodynamics of combustion and high-temperature gases. Conference, March 1970.
NASA SP-232	NASA SP-239
N71-27871	N70-32106
Avail GPO	Avail NTIS
231 pp	150 pp
1971	1970

The Mixed State of Superconductors	<i>W. R. Hudson</i>	The Development of Cryogenic Storage Systems for Space Flight
Mathematical models for mixed state of superconductors.		
NASA SP-240 N71-10415 Avail GPO	73 pp 1970	R. K. Allgeier, Jr., M. L. Davis, T. G. Rogers, et al. Development of cryogenic storage systems for manned space flight.
Atlas and Gazeteer of the Near Side of the Moon	<i>G. L. Gutschewski, D. C. Kinsler, E. Whitaker</i>	NASA SP-247 N71-30910 Avail GPO
Atlas of annotated Lunar Orbiter 4 photographs of near side of Moon, with gazeteer.	539 pp 1971	132 pp 1970
Guide to Lunar Orbiter Photographs	<i>T. P. Hansen</i>	Holographic Instrumentation Applications
Lunar Orbiter photographs and maps, missions 1 through 5.		R. M. Brown, B. Ragent Investigating possibilities and limitations of applying holographic techniques to aerospace technology. Conference, January 1970.
NASA SP-242 N71-36179 Avail GPO	254 pp 1970	NASA SP-248 N71-12776 Avail NTIS
Introduction to Experimental Techniques of High-Energy Astrophysics	<i>H. Oegelman, J. R. Wayland</i>	249 pp 1970
Measurements of cosmic rays and high-energy extraterrestrial particles.		Cosmic Gamma Rays
NASA SP-243 N71-11415 Avail NTIS	259 pp 1970	F. W. Stecker Cosmic gamma ray production processes, galactic and extragalactic gamma rays, and cosmology.
Power Processing	<i>F. C. Schwarz</i>	NASA SP-249 N71-24764 Avail GPO
Electrical engineering aspects of electric power processing and component technology.		231 pp 1971
NASA SP-244 N72-15229 Avail GPO	53 pp 1971	This Island Earth
Recent Advances in Refractory Alloys for Space Power Systems Conference Papers	<i>O. W. Nicks</i>	NASA SP-250 N71-12566 Avail GPO
Evaluation of refractory tantalum-, tungsten-, niobium-, and molybdenum-based alloys for space power systems applications. Conference, June 1969.		192 pp 1970
NASA SP-245 N71-13301 Avail NTIS	299 pp 1970	Significant Accomplishments in Science and Technology: Goddard Space Flight Center, 1969
Lunar Photographs From Apollos 8, 10, and 11	<i>R. G. Musgrave</i>	Aerospace scientific and technological studies in 1969 for satellite systems and spacecraft missions.
A catalog.		NASA SP-251 N71-25256 Avail NTIS
NASA SP-246 N71-29260 Avail GPO	24 pp 1971	376 pp 1970
The Entry Plasma Sheath and Its Effects on Space Vehicle Electromagnetic Systems. Volume I		The Entry Plasma Sheath and Its Effects on Space Vehicle Electromagnetic Systems. Volume I
Plasma sheath diagnostics and reduction for improved reentry communication. Symposium, October 1970.		NASA SP-252 N71-21101 Avail NTIS
		614 pp 1970

The Entry Plasma Sheath and Its Effects on Space Vehicle Electromagnetic Systems. Volume 2

Conference on entry plasma sheath and effects on space vehicle electromagnetic systems.

NASA SP-253
X71-10400 132 pp
1970

The Entry Plasma Sheath and Its Effects on Space Vehicle Electromagnetic Systems.

Classified document.

NASA SP-254
X71-76576 122 pp
1971

Third Conference on Sonic Boom Research

I. R. Schwartz

Prediction methods for sonic boom generation and propagation with overpressure minimization in supersonic transport design and operation. Conference, October 1970.

NASA SP-255
N71-28363 431 pp
Avail GPO 1971

Astronomical Use of Television-Type Image Sensors

V. R. Boscarino

Use of TV-type image sensors in astronomical photometry. Symposium, May 1970.

NASA SP-256
N71-28509 217 pp
Avail NTIS 1971

A Search for Carbon and Its Compounds in Lunar Samples From Mare Tranquillitatis

K. A. Kvenvolden, C. Ponnamperuma

Determination of carbon content of lunar samples from Apollo 11 flight.

NASA SP-257
N71-17964 127 pp
Avail NTIS 1970

Performance and Dynamics of Aerospace Vehicles

Performance, dynamics, and design of aeronautical and space vehicles.

NASA SP-258
N71-24701 670 pp
Avail NTIS 1971

Aircraft Propulsion

Conference, November 1970.

NASA SP-259
N71-19451 463 pp
Avail NTIS 1971

NASTRAN: A Summary of the Functions and Capabilities of the NASA Structural Analysis Computer System

T. G. Butler, D. Michel

Description of general purpose digital computer program for analysis of elastic structures under various loading conditions using finite element method approach.

NASA SP-260
N71-21559 27 pp
Avail NTIS 1971

Preliminary Results From an Operational 90-Day Manned Test of a Regenerative Life Support System

D. C. Grana, A. O. Pearson

Data from 90-day manned test of regenerative life support system in space station simulator. Symposium, November 1970.

NASA SP-261
N71-20951 579 pp
Avail NTIS 1971

Animal Orientation and Navigation

*S. R. Galler, K. Schmidt-Koenig,
G. J. Jacobs, et al.*

Animal orientation and navigation capabilities. Symposium, September 1970.

NASA SP-262
N72-25062 586 pp
Avail GPO 1972

The Mariner 6 and 7 Pictures of Mars

S. A. Collins, Jr.

Mariner 6 and 7 imagery photographs of Mars.

NASA SP-263
N73-13878 168 pp
Avail GPO 1971

Barium Releases at Altitudes Between 200 and 1000 Kilometers: A Joint MPI-NASA Experiment

*D. Adamson, H. T. Baber, Jr.,
K. H. Crumby*

Barium releases from Javelin and Nike-Tomahawk sounding rockets for ion cloud study of Earth electric and magnetic fields.

NASA SP-264
N71-29671 145 pp
Avail NTIS 1971

Report of the Joint DOT-NASA Civil Aviation R&D Policy Study, March 1971

Review of policies affecting civil aviation, problems confronting it, and potential for future contributions to national benefit.

NASA SP-265
N71-30506 104 pp
Avail NTIS 1971

Joint DOT-NASA Civil Aviation Policy Study (Supporting Papers)

Civil aviation research and development projects noting characteristics and growth to date, current problems, future requirements, potential solutions, and recommendations.

NASA SP-266
N71-30507 248 pp
Avail NTIS 1971

Physical Studies of the Minor Planets
T. Gebrels

Astronomical observations of asteroids. Conference, March 1971.

NASA SP-267
N72-25753 713 pp
Avail GPO 1971

The Pioneer Mission to Jupiter

Planning for Pioneer interplanetary missions with Jupiter flyby.

NASA SP-268
N71-32366 48 pp
Avail GPO 1971

Hypogravitic and Hypodynamic Environments

M. McCally, R. H. Murray
Aerospace environments, manned space flight, weightlessness simulation, musculoskeletal and cardiovascular systems, bone loss, mineral metabolism, and hematology. Conference, July 1969.

NASA SP-269
N71-33251 380 pp
Avail NTIS 1971

NASA Aircraft Safety and Operating Problems. Volume 1

Conference, May 1971.

NASA SP-270
N71-30756 444 pp
Avail NTIS 1971

NASA Aircraft Safety and Operating Problems. Volume 2

NASA aircraft safety and operational problems of high altitude supersonic cruise aircraft. Conference, May 1971.

NASA SP-271
X71-10673 50 pp
1971

Apollo 14 Preliminary Science Report

Lunar topographic, geologic, magnetic field, gravitation, and atmospheric data from Apollo 14 experiments and photography.

NASA SP-272
N71-30953 313 pp
Avail GPO 1971

Computer Program for Calculation of Complex Chemical Equilibrium Composition, Rocket Performance, Incident and Reflected Shocks, and Chapman-Jouguet Detonations

S. Gordon, B. J. McBride

Equations and computer program for calculating chemical equilibria in thermodynamic states of complex systems.

NASA SP-273
N71-37775 250 pp
Avail NTIS 1971

A Compilation of Nondimensional Numbers

N. S. Land

Identification and compilation of named nondimensional numbers used in technical areas.

NASA SP-274
N72-23982 126 pp
Avail GPO 1972

Monitoring Earth Resources from Aircraft and Spacecraft

R. N. Colwell

Procedures and techniques for determining Earth resources from high altitude aircraft and Apollo 9 photographs.

NASA SP-275
N72-18331 203 pp
Avail GPO 1971

Spacecraft Charge Buildup Analysis

*H. W. Bilsky, J. V. Gore,
M. A. Kasha, et al.*

Design and characteristics of spacecraft propulsion system using charge buildup and electric propulsion techniques.

NASA SP-276
N71-32812 40 pp
Avail NTIS 1971

Friction, Wear, and Lubrication in Vacuum

D. H. Buckley

Friction, wear, and lubrication of metals, nonmetal compounds, and polymers in vacuum environment.

NASA SP-277
N72-20451 192 pp
Avail NTIS 1971

The Interplanetary Pioneers. Volume I. Summary

W. R. Corliss

Pioneer space probe project to show history, design, development, flight operations, and results accomplished.

NASA SP-278
N73-14864 135 pp
Avail GPO 1972

**The Interplanetary Pioneers.
Volume II. System Design and
Development**

W. R. Corliss

Pioneer space probe system design and development, ground support system, tracking and communication, and data processing.

NASA SP-279
N73-17882 312 pp
Avail GPO 1972

**The Interplanetary Pioneers.
Volume III. Operations**

W. R. Corliss

Operational aspects of Pioneer program.

NASA SP-280
N73-20882 157 pp
Avail GPO 1972

**Seventh Annual Conference on Manual
Control**

Manual control systems for human operator modeling and display systems in man-machine environments. Conference, June 1971.

NASA SP-281
N73-10104 354 pp
Avail GPO 1972

**The Fifth Aerospace Mechanisms
Symposium**

Structural design principles and mechanical engineering methods for aerospace mechanisms used in orbital and space flights. Conference, June 1970.

NASA SP-282
N72-13391 196 pp
Avail NTIS 1971

Earth Resources Survey Systems

Applications of remote sensing to agriculture, forestry, oceanography, urban development. Workshop, May 1971.

NASA SP-283
N73-16348 359 pp
Avail GPO 1972

**Analysis of Surveyor 3 Material and
Photographs Returned by Apollo 12**

Postflight analysis of parts from Surveyor 3 spacecraft, lunar material, and photographs brought back on Apollo 12 flight.

NASA SP-284
N72-26731 302 pp
Avail GPO 1972

Remote Measurement of Pollution

Remote sensing techniques for measuring gaseous air pollution, water pollution, and particulate air pollution.

NASA SP-285
N72-18324 261 pp
Avail NTIS 1971

**Significant Accomplishments in Science:
Goddard Space Flight Center, 1970**

Research in Earth resources, meteorology, and interplanetary physics. Symposium, January 1971.

NASA SP-286
N72-23324 253 pp
Avail NTIS 1972

What Made Apollo a Success?

Apollo spacecraft development, mission planning, and flight operations.

NASA SP-287
N72-12892 87 pp
Avail NTIS 1971

Vibration of Shells

A. W. Leissa

Vibrational characteristics, mechanical properties, and stress analysis of thin shell structures of various cross sections.

NASA SP-288
N73-26924 435 pp
Avail GPO 1973

Apollo 15: Preliminary Science Report

Apollo 15 flight accomplishments, lunar surface activities, lunar orbital activities, and photographic coverage.

NASA SP-289
N72-22814 502 pp
Avail GPO 1972

Turbine Design and Application

A. J. Glassman

Review of turbine technology including thermodynamics, compressible fluid mechanics, fundamental turbine concepts, and velocity diagram design.

Volume I

NASA SP-290
N72-26685 101 pp
Avail GPO 1972

Volume II

NASA SP-290
N74-33476 152 pp
Avail GPO 1973

Volume III

NASA SP-290
N75-24741 141 pp
Avail GPO 1975

The Transformation of Scientists and Engineers Into Managers

J. A. Bayton, R. L. Chapman

Principal problems and obstacles faced by specialists during the transition period when they are becoming managers.

NASA SP-291
N72-27986
Avail GPO

135 pp
1972

Vehicle Technology for Civil Aviation: The Seventies and Beyond

Technological concepts for future transport aircraft developments in civil aviation. Conference, November 1971.

NASA SP-292
N72-12995
Avail NTIS

452 pp
1971

Experimental InterAmerican Meteorological Rocket Network (EXAMETNET): The First Five Years, 1966-1970

Five-year assessment of EXAMETNET, meteorological rocket network of Argentina, Brazil, and United States for stratospheric soundings.

NASA SP-293
N72-17558
Avail NTIS

58 pp
1972

Remote Sensing of the Chesapeake Bay

Remote sensing of resources contained in Chesapeake Bay to determine effects of environmental pollution. Conference, April 1971.

NASA SP-294
N72-26272
Avail GPO

176 pp
1972

Significant Accomplishments in Technology: Goddard Space Flight Center, 1970

J. M. Bridger

Technological developments in satellite communications, tracking, antenna arrays, attitude control, orbit calculations, and instrumentation. Symposium, January 1971.

NASA SP-295
N72-25755
Avail NTIS

214 pp
1972

Rocket/Nimbus Sounder Comparison (RNSC)

Radiance and temperature differences between rocket and Nimbus satellite systems.

NASA SP-296
N72-19892
Avail NTIS

46 pp
1972

Numerical Marching Techniques for Fluid Flows With Heat Transfer

R. W. Hornbeck

Formulations and solutions for fluid flow problems with associated heat transfer.

NASA SP-297
N74-12992
Avail GPO

349 pp
1973

Space Simulation

Symposium, May 1972.

NASA SP-298
N72-22250
Avail GPO

1093 pp
1972

Holography and Optical Filtering

Holography and optical filtering techniques for structural analysis, material tests, and astronomical observation. Conference, May 1971.

NASA SP-299
N73-25540
Avail GPO

195 pp
1973

Physics of the Solar System

S. I. Rasool

Solar system, solar physics, planetary atmospheres and structure, and origin of planets and Moon.

NASA SP-300
N72-25810
Avail GPO

519 pp
1972

Supercritical Wing Technology: A Progress Report on Flight Evaluations

Supercritical wing development and results of F-8 and T-2C test programs. Symposium, February 1972.

NASA SP-301
X72-10196

141 pp
1972

Second Conference on Portable Life Support Systems

Portable life support systems for human protection. Conference, May 1971.

NASA SP-302
N72-27106
Avail NTIS

350 pp
1972

The Quiet Sun

E. G. Gibson

Textbook of solar physics.

NASA SP-303
N73-25846
Avail GPO

344 pp
1973

**Fluid Mechanics, Acoustics, and Design
of Turbomachinery**

*B. Lakshminarayana, W. R. Britsch,
W. S. Gearhart*

Part 1

NASA SP-304
N75-11174
Avail GPO

419 pp
1974

Part 2

NASA SP-304
N75-11191
Avail GPO

447 pp
1974

Physics of the Space Environment

R. E. Smith, S. T. Wu

Upper atmospheric physics and chemistry, auroras, and solar flare forecasting. Colloquium, 1971.

NASA SP-305
N72-31384
Avail NTIS

176 pp
1972

**Compositions of Major and Minor
Minerals in Five Apollo 12 Crystalline
Rocks**

*B. M. French, K. F. J. Heinrich,
P. D. Loman, Jr., et al.*

Mineral analysis of lunar samples of crystalline rocks from Apollo 12 flight.

NASA SP-306
N73-16837
Avail NTIS

145 pp
1972

**Report of the Tape Recorder Action
Plan Committee, March 13, 1972**

Failure analysis of tape recorders for spacecraft applications.

NASA SP-307
N73-15225
Avail NTIS

52 pp
1972

Solar Wind

*C. P. Sonett, P. J. Coleman, Jr.,
J. M. Wilcox*

Magnetic structure of interplanetary and solar magnetic fields and solar wind. Conference, March 1971.

NASA SP-308
N73-10760
Avail GPO

728 pp
1972

**Advanced Approaches to Fatigue
Evaluation**

Fatigue test evaluation for aircraft structures. Symposium, May 1971.

NASA SP-309
N72-29895
Avail NTIS

675 pp
1972

**The Scientific Results From the Orbiting
Astronomical Observatory (OAO-2)**

A. D. Code

Scientific observations by OAO of solar system, interstellar matter, stellar atmospheres, and galactic and extragalactic systems. Conference, August 1971.

NASA SP-310
N72-31810
Avail NTIS

597 pp
1972

Aircraft Engine Noise Reduction

Conference, May 1972.

NASA SP-311
N73-12012
Avail NTIS

321 pp
1972

**Significant Accomplishments in Sciences:
Goddard Space Flight Center, 1971**

Research on remote sensing applications and satellite observation data. Symposium, November 1971.

NASA SP-312
N73-17934
Avail NTIS

220 pp
1972

Space for Mankind's Benefit

J. Vonputtkamer, T. J. McCullough
Conference, November 1971.

NASA SP-313
N73-13829
Avail GPO

415 pp
1972

**Fifth Symposium on the Role of the
Vestibular Organs in Space Exploration**

Vestibular problems of manned space flight for weightlessness and reduced gravity conditions with emphasis on space station development, including morphological studies. Symposium, August 1970.

NASA SP-314
N74-18754
Avail GPO

275 pp
1973

Apollo 16 Preliminary Science Report

Preliminary results of Apollo 16 investigations.

NASA SP-315
N73-21729
Avail GPO

636 pp
1972

**Advanced Methods for the Solution of
Differential Equations**

M. E. Goldstein, W. H. Braun

NASA SP-316
N74-10569
Avail GPO

359 pp
1973

Stellar Chromospheres*S. D. Jordan, E. H. Avrett*

Stellar chromospheres and their compositions. Colloquium, February 1972.

NASA SP-317

N73-13792

Avail GPO

318 pp

1973

Interdisciplinary Approach to Liquid Lubricant Technology*P. M. Ku*

Requirements and functions of liquid lubricants, mineral oils, greases, theory of rheology, mechanics and thermodynamics in lubrication, environmental capability of liquid lubricants, wear corrosion and erosion. Symposium, January 1972.

NASA SP-318

N74-12219

Avail GPO

569 pp

1973

Evolutionary and Physical Properties of Meteoroids*C. L. Hemenway, P. M. Millman,
A. F. Cook*

Astrophysical models for meteoroid formation and stellar and planetary evolutions developed from simulation composition studies. Colloquium, June 1971.

NASA SP-319

N74-19436

Avail GPO

361 pp

1973

STOL Technology

Aerodynamic characteristics and short haul transportation applications. Conference, October 1972.

NASA SP-320

N73-32934

Avail NTIS

516 pp

1972

Free Turbulent Shear Flows*S. F. Birch*

Development of data, including two-dimensional shear layers and axisymmetric jets. Conference, July 1972.

Volume I. Conference Proceedings

NASA SP-321

N73-28154

Avail NTIS

763 pp

1973

Volume II. Summary of Data

NASA SP-321

N73-27213

Avail NTIS

94 pp

1973

A Review of Methods for Predicting Air Pollution Dispersion*J. J. Mathis, Jr., W. L. Grose*

Air pollution models, and problem areas in air pollution dispersion modeling.

NASA SP-322

N73-20658

Avail NTIS

46 pp

1973

Accelerated Testing of Space Batteries*J. McCallum, R. E. Thomas,**J. H. Waite*

Accelerated life test program for space batteries.

NASA SP-323

N73-21958

Avail NTIS

220 pp

1973

Project Management in NASA: The System and the Men*R. H. Pontious, L. B. Barnes*

NASA SP-324

N74-15692

Avail GPO

137 pp

1973

The Orbital Mechanics of Flight Mechanics*R. S. Dunning*

Reference handbook on modern dynamic orbit theory.

NASA SP-325

N74-12482

Avail NTIS

164 pp

1973

Significant Accomplishments in Technology: Goddard Space Flight Center, 1972

Technology utilization in spacecraft guidance, ground operations, communications and navigation systems, and sensor development. Symposium, November 1972.

NASA SP-326

N73-27816

Avail NTIS

186 pp

1973

Significant Results Obtained From the Earth Resources Technology Satellite-1. Volume I: Technical Presentations*S. C. Freden, E. P. Mercanti,**M. A. Becker*

Symposium, March 1973.

NASA SP-327

N73-28207

Avail GPO

1686 pp

1973

Life Beyond Earth and the Mind of Man

R. Berendzen

Social, philosophical, and humanistic impacts of possible existence of extraterrestrial life. Symposium, November 1972.

NASA SP-328
N73-30807
Avail GPO

110 pp
1973

Mars as Viewed by Mariner 9

Photographs of the surface of Mars showing geologic features and effects of atmospheric phenomena.

NASA SP-329
N75-17270
Avail GPO

279 pp
1974

Apollo 17 Preliminary Science Report

Apollo 17 site selection, mission description, geological investigation of landing site, lunar experiments, visual flight flash phenomenon, volcanic studies, mare ridges, remote sensing and photogrammetric studies, astronomical photography.

NASA SP-330
N74-18428
Avail GPO

677 pp
1973

Significant Accomplishments in Sciences: Goddard Space Flight Center, 1972

Space applications research in astronomy and earth physics.

NASA SP-331
N73-31867
Avail NTIS

223 pp
1973

The Gum Nebula and Related Problems

Symposium, May 1971.

NASA SP-332
N73-31731
Avail NTIS

246 pp
1973

Design of Various Fixed-Geometry Water-Lubricated Hydrodynamic Journal Bearings for Maximum Stability

F. T. Schuller

NASA SP-333
N74-11305
Avail NTIS

101 pp
1973

The Viking Mission to Mars

Preview of the mission.

NASA SP-334
N74-34287
Avail NTIS

82 pp
1974

Advanced Scanners and Imaging Systems for Earth Observations

Electromechanical scanners, self-scanned solid state sensors, electron beam images, sensor related technology, user applications.

NASA SP-335
N74-11287
Avail GPO

620 pp
1973

Seventh Conference on Space Simulation

Conference, November 1973.

NASA SP-336
N74-10232
Avail GPO

935 pp
1973

The New Mars: The Discoveries of Mariner 9

W. K. Hartmann, O. Raper

A history of our knowledge of Mars—how we gained it and how it grew.

NASA SP-337
N75-13729
Avail GPO

192 pp
1974

Advanced Electro-Optical Imaging Techniques

S. Sobieski, E. J. Wampler

Symposium, September 1972.

NASA SP-338
N74-17406
Avail NTIS

134 pp
1973

Gamma-Ray Astrophysics

F. W. Stecker, A. I. Trombka

Symposium, May 1973.

NASA SP-339
N74-14465
Avail GPO

425 pp
1973

The Atmosphere of Titan

D. M. Hunten

Spectroscopic and radiometric observations used to form models for the Titan atmospheric composition and circulation.

NASA SP-340
N74-20478
Avail NTIS

185 pp
1974

Atlas of Surveyor 5 Television Data

*R. M. Batson, R. Jordan,
K. B. Larson*

NASA SP-341
N75-14665
Avail GPO

609 pp
1974

High Energy Phenomena on the Sun

R. Ramaty, R. G. Stone

Symposium, September 1972.

NASA SP-342
N74-21440
Avail GPO

640 pp
1973

The Rings of Saturn

F. D. Palluconi, G. H. Pettengill
Preview of Mariner Jupiter-Saturn '77 space
project. Workshop, August 1973.
NASA SP-343
N75-17236
Avail GPO

221 pp
1974

**Objectives and Models of the Planetary
Quarantine Program**

M. Werber
Objectives of the planetary quarantine pro-
gram and the history of early contamination
prevention efforts.
NASA SP-344
N75-25604
Avail GPO

140 pp
1975

Evolution of the Solar System

H. Alfén, G. Arbenius
Physical process and experimental studies
related to the origin and evolution of the solar
system.
NASA SP-345
N77-12959
Avail GPO

611 pp
1976

Aeroacoustics

M. E. Goldstein
NASA SP-346
N74-35118
Avail NTIS

440 pp
1974

**Aerodynamic Analyses Requiring
Advanced Computers**

Conference, March 1975.

Part 1

NASA SP-347
N76-10007
Avail NTIS

710 pp
1975

Part 2

NASA SP-347
N76-10031
Avail NTIS

779 pp
1975

**Radiative Property Data for Venusian
Entry: A Compendium**

*J. J. Jones, R. E. Bougbner,
K. V. Haggard, et al.*

NASA SP-348
N75-12880
Avail NTIS

85 pp
1974

**Pioneer Odyssey: Encounter With a
Giant**

*R. O. Fimmel, W. Swindell,
E. Burgess*

Pioneer Jupiter mission objectives, hazards,
spacecraft design, communication tech-
niques, mission accomplishments, scientific
payloads. (The Pioneer flyby of Saturn is in-
cluded in NASA SP-446.)

NASA SP-349
N75-10130
Avail GPO

183 pp
1974

Apollo Expeditions to the Moon

E. M. Cortright

From planning stages through Apollo 17. The
objectives and accomplishments of each mis-
sion are discussed.

NASA SP-350
N76-12956
Avail GPO

324 pp
1975

**Third Earth Resources Technology
Satellite-1 Symposium. Volume 1:
Technical Presentations, Section A**

*S. C. Freden, E. P. Mercanti,
M. A. Becker*

Symposium, December 1973.

NASA SP-351
N74-30705
Avail GPO

992 pp
1974

**Third Earth Resources Technology
Satellite-1 Symposium. Volume 1:
Technical Presentations, Section B**

*S. C. Freden, E. P. Mercanti,
M. A. Becker*

NASA SP-351
N74-30774
Avail GPO

936 pp
1974

Rotorcraft Dynamics

A dynamic structural analysis of rotary
winged aircraft considering helicopter vibra-
tion and loads. Conference, February 1974.

NASA SP-352
N74-34489
Avail NTIS

370 pp
1974

**Corn Blight Watch Experiment.
Summary Report**

NASA SP-353
N74-33861
Avail GPO

17 pp
1974

**DOT/NASA Comparative Assessment
of Brayton Engines for Guideway
Vehicles and Buses**

Volume I. Summary

NASA SP-354	
N75-18577	47 pp
Avail NTIS	1975
Volume II. Analysis and Results	
NASA SP-354	
N75-22745	284 pp
Avail NTIS	1975

Comet Kohoutek

G. A. Gary

Tail form, structure, and evolution; hydroxyl related observations; molecules and atoms in the coma and tail; photometry and radiometry; spacecraft and ground-based observation data. Color photographs. Workshop, June 1974.

NASA SP-355	
N76-10938	281 pp
Avail NTIS	1975

**Third Earth Resources Technology
Satellite-1 Symposium. Volume II:
Summary of Results**

*S. C. Freden, E. P. Mercanti,
D. B. Friedman*

Results and applications of ERTS-1 data for solving resource management problems. Symposium, December 1973.

NASA SP-356	
N75-10549	184 pp
Avail GPO	1974

**Third Earth Resources Technology
Satellite-1 Symposium. Volume III:
Discipline Summary Report**

*S. C. Freden, E. P. Mercanti,
D. B. Friedman*

Agriculture, forestry, and range resources; land use and mapping; mineral resource, geological structure, and landform surveys; water and marine resources; environmental surveys; interpretation techniques. Symposium, December 1973.

NASA SP-357	
N74-33873	159 pp
Avail GPO	1974

**Wave Climate Model of the Mid-
Atlantic Shelf and Shoreline (Virginian
Sea): Model Development, Shelf Geo-
morphology, and Preliminary Results**

V. Goldsmith, W. D. Morris,

R. J. Byrne, et al.

Computerized wave climate model that applies linear wave theory and shelf depth information to predict wave behavior.

NASA SP-358	
N75-23072	153 pp
Avail NTIS	1974

Monterey Bay Study

R. M. Bizzell, L. C. Wade

Usefulness of Landsat system in the planning and development of resource systems on Earth.

NASA SP-359	
N75-30629	33 pp
Avail GPO	1975

**Mission to Earth: Landsat Views the
World**

N. M. Short, P. D. Lowman, Jr.,

S. C. Freden, et al.

Four hundred color plates showing land cultural features.

NASA SP-360	
N77-17532	926 pp
Avail GPO	1976

**Educator's Guide for Mission to Earth:
Landsat Views the World**

M. A. Tindal

Information for using Landsat imagery to aid in teaching earth science and geology, environmental studies, geography, social and urban studies.

Supplement to NASA SP-360	
N80-10537	56 pp
Avail GPO	1978

**Significant Accomplishments in Science
and Technology: Goddard Space Flight
Center, 1973**

Cometary physics, x-ray and gamma ray astronomy, solar and terrestrial physics, spacecraft technology, Earth Resources Technology Satellite (Landsat), Earth and ocean physics, communications and navigation, mission operations and data systems, network systems and operations. Symposium, December 1973.

NASA SP-361	
N75-16422	360 pp
Avail NTIS	1975

Apollo Over the Moon: A View From Orbit

H. Masursky, G. W. Colton,

F. El-Baz, et al.

Photographs taken by the Apollo metric camera system.

NASA SP-362

N78-21174

Avail GPO

263 pp

1978

Technology and the Neurologically Handicapped

Bioengineering approaches to the treatment of neurologically handicapped persons; neurophysiological aspects of control systems and man-machine integration. Conference, September 1971.

NASA SP-363

N75-19975

Avail NTIS

278 pp

1974

Data Collection System: Earth Resources Technology Satellite-1

S. Cooper, P. T. Ryan

Sensors, interface hardware, power supplies, environmental enclosures, data transmission, processing and distribution, maintenance and integration in resources management systems. Conference, May 1973.

NASA SP-364

N75-16050

Avail NTIS

127 pp

1975

National Geodetic Satellite Program

S. W. Henrikson

Instruments used to obtain data, description of data, data processing theory, evaluation of results.

Part 1

NASA SP-365

N78-11545

Avail NTIS

523 pp

1977

Part 2

NASA SP-365

N78-11552

Avail GPO

509 pp

1977

Possible Relationships Between Solar Activity and Meteorological Phenomena

W. R. Bandeen, S. P. Maran

Symposium, November 1973.

NASA SP-366

N76-14528

Avail GPO

263 pp

1975

Introduction to the Aerodynamics of Flight

T. A. Talay

The atmosphere, fluid flow, subsonic flow effects, transonic flow, supersonic flow, aircraft performance, and stability and control.

NASA SP-367

N76-11043

Avail NTIS

203 pp

1975

Biomedical Results From Apollo

R. S. Johnston, L. F. Dietlein,

C. A. Berry

Crew health and inflight monitoring, preflight and postflight medical testing, inflight experiments, quarantine, and life support systems.

NASA SP-368

N76-12668

Avail GPO

592 pp

1975

Forced-Flow Once-Through Boilers: NASA Research

J. R. Stone, V. H. Gray,

O. A. Gutierrez

Research on boilers for use in spacecraft electrical power generation systems.

NASA SP-369

N75-32388

Avail NTIS

142 pp

1975

The Soviet-American Conference on Cosmochemistry of the Moon and Planets

J. H. Pomeroy, N. J. Hubbard

Thermal history of the Moon; lunar gravitation and magnetism; chronology of the moon, planets, and meteorites; hypotheses about the origin and evolution of the Moon and planets; data on Mercury, Venus, Mars, Jupiter. Conference, June 1974.

Part 1

NASA SP-370

N78-12925

Avail GPO

503 pp

1977

Part 2

NASA SP-370

N78-12958

Avail GPO

423 pp

1977

Large Scale Dynamic Systems

Large scale dynamic systems in terms of modern control theory in the fields of aeronautics, water resources, and electrical power. Workshop, August 1974.

NASA SP-371

N75-29845

Avail NTIS

206 pp

1975

NASA-University Conference on Aeronautics

Aeronautics and the education of the engineers, technical trends in aeronautics, and the role of the university in aeronautics. Conference, October 1974.

NASA SP-372
N75-29001 430 pp
Avail NTIS 1975

Free Radical OH: A Molecule of Astrophysical and Aeronomical Interest

H. Shardinand Mohan

Rotational-vibrational transitions, dissociation and ionization processes, and spectral characteristics.

NASA SP-373
N75-29960 90 pp
Avail NTIS 1975

Foundations of Space Biology and Medicine

M. Calvin, O. G. Gazeiko

Volume I. Space as a Habitat

NASA SP-374
N76-26799 458 pp
Avail GPO 1975

Volume II. Ecological and Physiological Bases of Space Biology and Medicine

Book 1
NASA SP-374
N76-26809 415 pp
Avail GPO 1975

Book 2
NASA SP-374
N76-26819 756 pp
Avail GPO 1975

Volume III. Space Medicine and Biotechnology

NASA SP-374
N76-26829 542 pp
Avail GPO 1975

The Use of Lasers for Hydrographic Studies

H. H. Kim, P. T. Ryan

Use of remote laser sensors in water pollution detection and identification, coastal environment monitoring, bathymetric depth sounding. Symposium, September 1973.

NASA SP-375
N75-30525 202 pp
Avail NTIS 1975

Active Microwave Workshop Report

R. E. Matthews

Data on active microwave systems. Remote sensing of Earth/land features, ocean/atmosphere interactions, equipment and instrument technology. Workshop, July 1974.

NASA SP-376
N76-11811 513 pp
Avail GPO 1975

Biomedical Results From Skylab

R. S. Johnston, L. F. Dietlein

Physiological responses of space crew to prolonged space flight stress.

NASA SP-377
N77-33780 502 pp
Avail GPO 1977

Numerical Studies of Incompressible Viscous Flow in a Driven Cavity

Numerical methods that can be applied to the Navier-Stokes equations; cubic spline procedure.

NASA SP-378
N76-16023 132 pp
Avail NTIS 1975

Eighth Conference on Space Simulation

State of the art in space simulation: spacecraft contamination, thermal control systems, biosciences, flammability. Conference, November 1975.

NASA SP-379
N76-11113 859 pp
Avail NTIS 1975

Skylab Explores the Earth

Experiments to determine the types of data obtainable through visual observation by Skylab crews.

NASA SP-380
N77-28548 531 pp
Avail GPO 1977

Aeronautical Propulsion

Engine design, exhaust gases, use of composites, bearings, supersonic and hypersonic propulsion. Conference, May 1975.

NASA SP-381
N75-31068 476 pp
Avail NTIS 1975

The Atmosphere of Venus

J. E. Hansen

Dynamics, structure, chemistry and evolution of the atmosphere of Venus. Conference, October 1974.

NASA SP-382
N76-10933 202 pp
Avail NTIS 1975

Cepheid Modeling

D. Fischel, W. M. Sparks

Mathematical techniques used to model the instability behavior of cepheid variables. Conference, July 1974.

NASA SP-383
N76-10951
Avail NTIS

338 pp
1975

Significant Accomplishments in Science and Technology: Goddard Space Flight Center, 1974

Earth resources and astronomy; photographs of satellite observations. Symposium, December 1974.

NASA SP-384
N76-10934
Avail NTIS

208 pp
1975

Proceedings of the 1958 Flight Flutter Testing Symposium

Theory, methods, and techniques of flight flutter testing. Symposium, May 1958.

NASA SP-385
N76-10095
Avail NTIS

196 pp
1975

Outlook for Space: Report to the NASA Administrator by the Outlook for Space Study Group

Future activities in the context of national needs, 1980-2000.

NASA SP-386
N76-18004
Avail GPO

373 pp
1976

A Forecast of Space Technology: 1980-2000

Information management, scientific resources, management of energy and matter.

NASA SP-387
N76-18005
Avail GPO

320 pp
1976

Analytical Applications of Bioluminescence and Chemiluminescence

E. W. Chappelle, G. L. Picciolo

NASA SP-388
N76-15538
Avail NTIS

119 pp
1975

X-Ray Binaries

Satellite x-ray experiments and ground-based programs aimed at observation of x-ray binaries. Symposium, October 1975.

NASA SP-389
N76-26056
Avail NTIS

718 pp
1976

Applications of Computer Graphics in Engineering

Conference, October 1975.

NASA SP-390
N76-16812
Avail NTIS

661 pp
1975

Operational Applications of Satellite Snowcover Observations

A. Rango

Snow measurements made by Landsat and NOAA satellites were used to help forecast runoff and flooding. Conference, August 1975.

NASA SP-391
N76-16561
Avail NTIS

430 pp
1975

The Space Telescope

Mission planning, telescope performance, optical detectors, mirror construction, pointing and control systems, data management, and maintenance of the telescope. Meeting, August 1975.

NASA SP-392
N76-23110
Avail GPO

240 pp
1976

The Study of Comets

*B. Donn, M. J. Mumma,
W. M. Jackson, et al.*

Photometry and spectrum analysis of Kohoutek comet and comet tails. Colloquium, November 1974.

Part 1
NASA SP-393
N76-21052
Avail GPO

557 pp
1976

Part 2
NASA SP-393
N76-21075
Avail GPO

557 pp
1976

A Survey of Computational Aerodynamics in the United States

A. Gessow, D. J. Morris

Programs in theoretical and computational aerodynamics, including application for boundary layer flow, Navier-Stokes turbulence modeling, internal flows, two-dimensional configurations, subsonic and supersonic aircraft, transonic aircraft, and the Space Shuttle.

NASA SP-394
N78-11007
Avail NTIS

49 pp
1977

Second NASA Conference on Laser Energy Conversion

K. W. Billman

The possible transmission of high-power laser beams over long distances and their conversion to thrust, electricity, and other useful forms of energy. Conference, January 1975.

NASA SP-395

N76-21505

Avail NTIS

196 pp

1976

Solar-Wind Interaction With the Planets Mercury, Venus, and Mars

N. F. Ness

Magnetic field and plasma measurements in the environments of Mars, Mercury, and Venus. Seminar, November 1975.

NASA SP-397

N76-25125

Avail NTIS

172 pp

1976

The 1976 Standard Atmosphere Above 86-km Altitude

R. A. Minzner

Development of an atmospheric model, temperature and composition profiles.

NASA SP-398

N77-10755

Avail NTIS

77 pp

1976

Skylab EREP Investigations Summary

W. J. Pierson

EREP data on agriculture, cartography, geology, hydrology, oceans atmosphere.

NASA SP-399

N79-17279

Avail GPO

387 pp

1978

Skylab, Our First Space Station

L. F. Belew

Skylab's role in the study of solar and stellar astronomy, data on solar physics and space processing experiments.

NASA SP-400

N77-27155

Avail GPO

176 pp

1977

Skylab, Classroom in Space

L. B. Summerlin

Student-designed Skylab experiments and demonstrations on the effect of weightlessness.

NASA SP-401

N77-29189

Avail GPO

190 pp

1977

A New Sun: The Solar Results From Skylab

J. A. Eddy

The Sun as seen by Skylab's cameras.

NASA SP-402

N79-22991

Avail GPO

220 pp

1979

Volcanic Features of Hawaii. A Basis for Comparison With Mars

M. H. Carr, R. Greeley

Similarities and differences between the volcanoes of Hawaii and those on Mars. Photographs.

NASA SP-403

N80-23912

Avail GPO

216 pp

1980

Skylab's Astronomy and Space Sciences

C. A. Lundquist

Skylab's multidisciplinary capabilities, including observations of stars and galaxies, energetic particles, interplanetary dust, Comet Kohoutek.

NASA SP-404

N79-34118

Avail GPO

126 pp

1979

Vortex-Lattice Utilization

Implementation and application of the vortex-lattice method to aerodynamic design and analysis. Workshop, May 1976.

NASA SP-405

N76-28163

Avail NTIS

409 pp

1976

Powered-Lift Aerodynamics and Acoustics

Conference on high-lift aerodynamics, high-speed and cruise aerodynamics, acoustics, propulsion aerodynamics and acoustics, aerodynamic and acoustic loads, and full-scale and flight research. May 1976.

NASA SP-406

N78-24016

Avail NTIS

502 pp

1976

Space Shuttle

Flight system, mission profile, economic and social benefits, description of vehicle.

NASA SP-407

N76-31268

Avail GPO

97 pp

1976

Viking 1: Early Results

Text and photos from the first weeks after the Viking 1 landing on Mars.

NASA SP-408

N76-28296

Avail NTIS

76 pp

1976

Wake Vortex Minimization

Research on the effect of wing span, wing flaps, spoilers, splines, and engine thrust on vortex attenuation. Symposium, February 1976.

NASA SP-409
N78-12017
Avail NTIS

403 pp
1977

Satellite-Derived Global Oceanic Rainfall Atlas

*M. S. V. Rao, W. V. Abbott III,
J. S. Theon*

NASA SP-410
N77-19709
Avail GPO

336 pp
1976

The Apollo-Soyuz Test Project Medical Report

A. E. Nicogossian

Clinical aspects and preflight and postflight research studies performed on the astronauts.

NASA SP-411
N77-30735
Avail NTIS

129 pp
1977

Apollo-Soyuz Test Project Summary Science Report

Volume I. Astronomy, Earth Atmosphere and Gravity Field, Life Sciences, and Materials Processing

NASA SP-412
N78-17088
Avail NTIS

570 pp
1977

Volume II. Earth Observations and Photography

F. El-Baz, D. M. Warner

NASA SP-412
N80-10538
Avail NTIS

700 pp
1979

Settlements in Space: A Design Study

R. D. Johnson, C. Holbrow

Concept of how people might permanently sustain life in space on a large scale; design of a system to colonize space.

NASA SP-413
N77-21106
Avail GPO

191 pp
1977

On the Habitability of Mars: An Approach to Planetary Ecosynthesis

M. M. Averner, R. D. Macelroy

Examination of the possibility of utilizing Mars as a habitat for terrestrial life.

NASA SP-414
N77-12718
Avail NTIS

114 pp
1976

Flutter Testing Techniques

Developments in methodology and data analysis techniques for flutter testing in flight and on the ground

NASA SP-415
N77-21022
Avail NTIS

483 pp
1976

Aircraft Safety and Operating Problems

Terminal area operations, flight dynamics and control, ground operations, atmospheric environment, structures and materials, power plants, noise, human factors engineering. Conference, October 1976.

NASA SP-416
N77-18081
Avail NTIS

644 pp
1976

A Geological Basis for the Exploration of the Planets

R. Greeley, M. H. Carr

Relevance of planetary geology in relation to the origin and evolution of the solar system and life. Stratigraphy, structural geology, and geochemistry of planets.

NASA SP-417
N77-15961
Avail NTIS

117 pp
1976

Lunar Sample Studies

Technical examination of breccias, basalts, and anorthosites.

NASA SP-418
N77-27053
Avail NTIS

72 pp
1977

The Search for Extraterrestrial Intelligence: SETI

P. Morrison, J. Billingham, J. Wolfe
Cosmic evolution, space communication, technological advances, search strategies and systems. Includes bibliography of reports concerning the search for extraterrestrial intelligence.

NASA SP-419
N78-18771
Avail GPO

289 pp
1977

Voyager to Jupiter and Saturn

Voyager mission schedule and profiles for encounters, description of spacecraft and trajectories, scientific investigations and instruments.

NASA SP-420
N77-29046
Avail NTIS

62 pp
1977

Recognition of Compact Astrophysical Objects

H. Ogelman, R. Rotschild

Stellar evolution, pulsars, binary stars, x-ray signatures, gamma ray sources, temporal analysis of x-ray data.

NASA SP-421
N77-34063 200 pp
Avail NTIS 1977

Calculation Methods for Compressible Turbulent Boundary Layers: State-of-the-Art, 1976

*D. M. Bushnell, A. M. Cary, Jr.,
J. E. Harris*

Equations and closure methods for compressible turbulent boundary layers, flow phenomena, three-dimensional layers.

NASA SP-422
N78-13371 146 pp
Avail NTIS 1977

Atlas of Mercury

*M. E. Davies, S. E. Dornik,
D. E. Gault, R. G. Strom*

Mariner 10 spacecraft, scientific mission, surface mapping techniques, topographic features of Mercury. Photographs, shaded relief maps, photomosaics.

NASA SP-423
N78-30025 135 pp
Avail GPO 1978

The Voyage of Mariner 10: Mission to Venus and Mercury

J. A. Dunne, E. Burgess

Historical details of Mariner 10 mission, images of Venus and Mercury.

NASA SP-424
N78-27146 233 pp
Avail GPO 1978

The Martian Landscape

Design of the facsimile camera, image sequencing, picture calibration, reconstruction of color, search for motion on Mars. Over 200 color and black and white photographs. Stereo pairs and stereopticon included.

NASA SP-425
N79-12984 160 pp
Avail GPO 1978

Sun, Weather, and Climate

J. R. Herman, R. A. Goldberg

Solar-related correlation factors, long-term climatic trends, short-term meteorological correlations, obscuring influences, physical processes and mechanisms, recapitulation of Sun-weather relationships, guidelines for experiments.

NASA SP-426
N79-20961 365 pp
Avail GPO 1978

High-Altitude Perspective

Capabilities of the NASA Ames Research Center U-2 aircraft for research or experimental programs.

NASA SP-427
N78-31508 33 pp
Avail GPO 1978

Space Resources and Space Settlements

*J. Billingham, W. P. Gilbreath,
B. Olearay, et al.*

Research needs for regenerative life-support systems, habitat design, dynamics and design of electromagnetic mass drivers, asteroids as resources for space manufacturing, processing of nonterrestrial materials.

NASA SP-428
N79-32225 292 pp
Avail GPO 1979

Physiological Responses of Women to Simulated Weightlessness

H. Sandler, D. L. Winter

Subjects were exposed to centrifugation, lower body negative pressure, and exercise stress.

NASA SP-430
N79-13686 92 pp
Avail NTIS 1978

The Space Shuttle at Work

H. Allaway

Operation, tasks and duties, design, future development of the Space Shuttle.

NASA SP-432
N80-30367 84 pp
Avail GPO 1979

Shuttle Atmospheric Lidar Research Program: Final Report of Science Working Group

Determination of global flow of water vapor and pollutants in the troposphere, improvement of chemical and transport models of the stratosphere and mesosphere, evaluation of radiative models of the atmosphere, investigation of chemistry and transport of thermospheric atomic species and magnetospheric aspects of Sun/weather relationships.

NASA SP-433
N80-11414 231 pp
Avail NTIS 1979

An Emission-Line Survey of the Milky Way

*R. A. R. Parker, T. R. Gull,
R. P. Kirschner*

The instrumentation used in an examination of the ionization structure of emission nebulae and of the galactic plane in general, and characteristics of the prints obtained.

NASA SP-434
N80-11966 224 pp
Avail GPO 1979

Terminal Configured Vehicle Program Facilities Guide

Program established to conduct research and to develop and evaluate aircraft and flight management system technology concepts to benefit conventional takeoff and landing operations in the terminal area. Analyses, simulation and flight experiments.

NASA SP-435
N80-18028 67 pp
Avail NTIS 1980

Project Orion: A Design Study of a System for Detecting Extrasolar Planets

D. C. Black

Design concept for a ground-based astrometric telescope that could significantly increase the potential accuracy of astrometric observations.

NASA SP-436
N80-27260 214 pp
Avail GPO 1980

Mathematical Modeling of Diverse Phenomena

J. C. Howard

Tensor calculus applied to the formulation of mathematical models of diverse phenomena.

NASA SP-437
N80-13839 402 pp
Avail NTIS 1979

Atlas of Mars

R. M. Batson, P. M. Bridges, J. L. Inge
Small-scale maps and photomosaics covering the entire surface of the planet Mars.

NASA SP-438
N80-16998 154 pp
Avail GPO 1979

Voyage to Jupiter

D. Morrison, J. Samz
The story of the Voyager project, including many color photographs from the Voyager 1 and 2 flybys of Jupiter.

NASA SP-439
N81-10910 211 pp
Avail GPO 1980

Viking Orbiter Views of Mars

C. R. Spitzer
A collection of Viking Orbiter images, including polar regions, moons, atmosphere, craters, and channels. Stereopticon included.

NASA SP-441
N81-11966 189 pp
Avail GPO 1980

Lessons of the NASA Tech House

H. Allaway
Report of a family's one-year residence in Langley Research Center's experimental house of the future that combines advanced electronics, solar energy, water recycling, and fire-retardant materials.

NASA SP-442
N80-27219 41 pp
Avail GPO 1980

Images of Mars: The Viking Extended Mission

M. H. Carr, N. Evans
Thirty black and white photographs of Mars, some taken as recently as 1979, showing volcanoes, lava plains, channels, canyons, plateaus, impact craters, surface features of Phobos and Deimos.

NASA SP-444
N80-26239 35 pp
Avail GPO 1980

Pioneer: First to Jupiter, Saturn, and Beyond

*R. C. Fimmel, J. A. Van Allen,
E. Burgess*

The missions of Pioneers 10 and 11 to Jupiter and Saturn and toward the outermost limits of the solar system. Descriptions of the spacecraft, the scientific payload, the mission and details of all scientific results. (Supersedes NASA SP-349)

NASA SP-446
N81-15925 293 pp
Avail GPO 1980

Handbooks and Data Compilations

**Thermodynamic Properties to 6000 K
for 210 Substances Involving the First
18 Elements**

*J. G. Eblers, S. Gordon,
S. Heimel, et al.*

NASA SP-3001	
N63-23715	332 pp
Avail NTIS	1963

**Thermodynamic Properties and Mollier
Chart for Hydrogen From 300 K to
20 000 K**

R. F. Kubin, L. L. Presley

NASA SP-3002	
N64-18507	69 pp
Avail NTIS	1964

**Handbook of Space-Radiation Effects
on Solar-Cell Power Systems**

W. C. Cooley, R. J. Janda

NASA SP-3003	
N63-20315	120 pp
Avail NTIS	1963

**Tables for Supersonic Flow Around
Right Circular Cones at Zero Angle of
Attack**

J. L. Sims

NASA SP-3004	
N64-18949	428 pp
Avail GPO	1964

**Tables of the Composition, Opacity,
and Thermodynamic Properties of
Hydrogen at High Temperatures**

N. L. Krascella

NASA SP-3005	
N65-14300	190 pp
Avail NTIS	1963

Bioastronautics Data Book

J. F. Parker, Jr., V. R. West

Bioastronautics research, including stress effects, sensory perception, and human performance.

NASA SP-3006	
N73-15091	938 pp
Avail GPO	1973

**Tables for Supersonic Flow Around
Right Circular Cones at Small Angle of
Attack**

J. L. Sims

NASA SP-3007	
N64-25017	427 pp
Avail GPO	1964

**Energy Spectra and Angular Distributions of Electrons Transmitted Through
Sapphire (Aluminum Oxide) Foils**

M. J. Berger, S. M. Seltzer

NASA SP-3008	
N64-18416	109 pp
Avail NTIS	1964

Tables of Flow Properties of Thermally Perfect Carbon Dioxide and Nitrogen Mixtures

W. P. Peterson

NASA SP-3009	
N64-19997	119 pp
Avail NTIS	1964

Tables of the Complex Fresnel Integral

C. W. Martz

Fresnel integral evaluated by Taylor series expansions.

NASA SP-3010	
N64-23531	298 pp
Avail NTIS	1964

Thermodynamic and Transport Properties for the Hydrogen-Oxygen System

R. A. Svebla

NASA SP-3011	
N64-26785	423 pp
Avail NTIS	1964

**Tables of Energy Losses and Ranges of
Electrons and Positrons**

M. J. Berger, S. M. Seltzer

NASA SP-3012	
N65-12506	131 pp
Avail NTIS	1964

**Tables of Energy Losses and Ranges of
Heavy Charged Particles**

W. H. Barkas, M. J. Berger

NASA SP-3013	
N65-12507	132 pp
Avail NTIS	1964

Equilibrium Thermodynamic Properties of Carbon Dioxide

H. E. Bailey

NASA SP-3014	
N65-20478	69 pp
Avail NTIS	1965

**Charts for Equilibrium Flow Properties
of Carbon Dioxide in Hypervelocity
Nozzles**

L. H. Jorgensen, R. J. Redmond

NASA SP-3015
N65-20479
Avail NTIS

74 pp
1965

**Venus and Mars Nominal Natural
Environment for Advanced Manned
Planetary Mission Programs**

*D. E. Evans, G. L. Kraus,
D. E. Pitts*

NASA SP-3016
N67-25042
Avail NTIS

59 pp
1967

**Charts for Approximate Thermodynamic
Properties of Nitrogen-Oxygen Mixtures**

R. D. Brown, B. Fowler

Charts for equilibrium thermodynamic properties of nitrogen-oxygen mixtures under extreme pressure and temperature ranges.

NASA SP-3017
N65-26639
Avail NTIS

116 pp
1965

**Charts for Equilibrium and Frozen
Flows Across Plane Shock Waves in
Carbon Dioxide**

V. L. Peterson, C. D. Simcox

Charts for equilibrium and frozen flow across plane shock waves in carbon dioxide used in estimating aerodynamic performance characteristics of bodies in flight.

NASA SP-3018
N65-28627
Avail NTIS

128 pp
1965

**Charts for Equilibrium and Frozen
Nozzle Flows of Carbon Dioxide**

G. G. Mateer, V. L. Peterson

NASA SP-3019
N65-29951
Avail NTIS

80 pp
1965

**Charts of Isentropic Exponent as a
Function of Enthalpy for Various Gases
in Equilibrium**

L. H. Jorgensen

Charts of isentropic exponent as function of enthalpy and speed for air, nitrogen, carbon dioxide, and mixtures of nitrogen and carbon dioxide in equilibrium.

NASA SP-3020
N65-34243
Avail NTIS

13 pp
1965

**Equilibrium Thermodynamic Properties
of Three Engineering Models of the
Martian Atmosphere**

H. E. Bailey

Equilibrium thermodynamic properties (entropy, enthalpy, pressure, and sound speed) of three engineering models of Martian atmosphere.

NASA SP-3021
N65-35792
Avail NTIS

164 pp
1965

**Magnetic Fields Due to Solid and
Hollow Conical Conductors**

*J. C. Laurence, J. C. Stoll,
P. L. Yobner*

Technology of high field electromagnets, axial and radial components of magnetic field produced by solid conical conductor with constant azimuthal current density.

NASA SP-3022
N66-13046
Avail NTIS

133 pp
1965

**Calculations of Thermal Field Emission
for a Terminated Image Potential**

J. F. Morris

NASA SP-3023
N66-16421
Avail NTIS

612 pp
1966

**Models of the Trapped Radiation
Environment. Volume I: Inner Zone
Protons and Electrons**

J. I. Vette

Models of inner radiation belt to determine values of fluxes and energy spectra of protons and electrons trapped in geomagnetic field.

NASA SP-3024
N66-16054
Avail NTIS

59 pp
1966

**Models of the Trapped Radiation
Environment. Volume II: Inner and
Outer Zone Electrons**

A. B. Lucero, J. I. Vette, J. A. Wright

Trapped electron environment in inner and outer radiation belts: tables and graphs.

NASA SP-3024
N66-35685
Avail NTIS

100 pp
1966

**Models of the Trapped Electron
Radiation Environment. Volume III:
Electrons at Synchronous Altitudes**

A. B. Lucero, J. I. Vette, J. A. Wright

NASA SP-3024
N67-19899
Avail NTIS

111 pp
1967

Models of the Trapped Radiation Environment. Volume IV: Low Energy Protons

J. H. King

NASA SP-3024

N67-36447

Avail NTIS

66 pp

1967

Models of the Trapped Radiation Environment. Volume V: Inner Belt Protons

J. P. Lavine, J. I. Vette

Model environment of inner belt proton fluxes.

NASA SP-3024

N69-28911

Avail NTIS

61 pp

1969

Models of the Trapped Radiation Environment. Volume VI: High Energy Protons

J. P. Lavine, J. I. Vette

Model environment of high energy protons trapped in radiation belts.

NASA SP-3024

N71-12117

Avail NTIS

49 pp

1970

Models of the Trapped Radiation Environment. Volume VII: Long Term Time Variations

Time variations of energetic electron and solar proton distributions in inner radiation belt.

NASA SP-3024

N71-29089

Avail NTIS

62 pp

1971

Space Materials Handbook: Supplement 1 to the Second Edition, Space Materials Experience

J. B. Rittenhouse, J. B. Singletary

Spacecraft structures and systems materials handbook.

NASA SP-3025

N66-18439

Avail NTIS

276 pp

1966

Electron Densities and Scale Heights in the Topside Ionosphere: Alouette I Observations in Midlatitudes

L. Colin, M. J. Rycroft, J. O. Thomas

NASA SP-3026

N66-27056

Avail NTIS

658 pp

1966

Electron Densities and Scale Heights in the Topside Ionosphere: Alouette I Observations Over the American Continents. Volume I: November, December 1962, and January 1963

K. L. Chan, L. Colin, J. O. Thomas

NASA SP-3027

N66-33197

Avail NTIS

508 pp

1966

Space Measurement Survey: Instruments and Spacecraft, October 1957-March 1965

H. L. Richter, Jr., H. L. Richter

List of satellites and space probes with descriptions of scientific instrumentation.

NASA SP-3028

N66-33075

Avail NTIS

1013 pp

1966

Handbook of the Physical Properties of the Planet Venus

H. A. Hyatt, L. R. Koenig, C. M. Michaux, et al.

Handbook of physical properties, theories, and scientific observations for planet Venus.

NASA SP-3029

N67-31439

Avail NTIS

124 pp

1967

Handbook of the Physical Properties of the Planet Mars

C. M. Michaux

NASA SP-3030

N67-35182

Avail NTIS

173 pp

1967

Handbook of the Physical Properties of the Planet Jupiter

C. M. Michaux

NASA SP-3031

N67-26559

Avail GPO

140 pp

1967

Electron Densities and Scale Heights in the Topside Ionosphere: Alouette I Observations Over the American Continents. Volume II: March and May 1963

K. L. Chan, L. Colin, J. O. Thomas

NASA SP-3032

N66-38867

Avail NTIS

610 pp

1966

Electron Densities and Scale Heights in the Topside Ionosphere: Alouette I Observations Over the American Continents. Volume III: June, July, September, and October 1963

K. L. Chan, L. Colin, J. O. Thomas

NASA SP-3033

N67-14933

Avail NTIS

585 pp

1966

Electron Densities and Scale Heights in the Topside Ionosphere: Alouette I Observations Over the American Continents. Volume IV: Summary Graphs

K. L. Chan, L. Colin, J. O. Thomas

NASA SP-3034

N67-36446

Avail NTIS

324 pp

1967

Thermodynamic, Transport, and Flow Properties for the Products of Methane Burned in Oxygen-Enriched Air

B. H. Croom, E. W. Leyde

NASA SP-3035

N66-37802

Avail NTIS

91 pp

1966

Additional Stopping Power and Range Tables for Protons, Mesons, and Electrons

M. J. Berger, S. M. Seltzer

Stopping power and range tables for protons, mesons, and electrons in lithium fluoride, silicon, germanium, liquid hydrogen, propane, and freon.

NASA SP-3036

N67-14099

Avail NTIS

40 pp

1966

Handling and Use of Fluorine and Fluorine-Oxygen Mixtures in Rocket Systems

J. T. Harper, H. W. Schmidt

NASA SP-3037

N67-26000

Avail NTIS

285 pp

1967

Electron Densities and Scale Heights in the Topside Ionosphere: Alouette I Observations Recorded in Hawaii: Winter 1962-1963, Summer 1963

K. L. Chan, L. Colin

Tabulations and graphs of electron density and plasma scale height data computed from Alouette I topside sounder ionograms.

NASA SP-3038

N67-18948

Avail NTIS

286 pp

1967

Tables of Interference Factors for Use in Correcting Data From VTOL Models in Wind Tunnels With 7 by 10 Proportions

H. H. Heyson

NASA SP-3039

N67-22897

Avail NTIS

653 pp

1967

Thermodynamic Equilibrium in Pre-biological Atmospheres of C, H, O, N, P, S, and Cl

M. O. Dayhoff, R. V. Eck, E. R. Lippincott, et al.

Thermodynamic equilibrium in prebiological atmospheres, and inorganic origin of organic compounds.

NASA SP-3040

N67-27295

Avail NTIS

274 pp

1967

Tables of Fe I Line Intensities.

Volume 1: Temperature From 1000 to 6500 K.

Volume 2: Temperatures Between 6500 and 20 000 K

W. J. Borucki

Atomic line intensity tables for ionized iron atom at high temperatures.

NASA SP-3041

N68-24161

Avail NTIS

219 pp

1968

Tabulated Communication Characteristics of a Steady-State Model of Interplanetary Space

J. Dimeff, R. J. Hruby, A. H. Somes, et al.

NASA SP-3042

N68-10164

Avail NTIS

526 pp

1967

Properties of Magnetic Materials for Use in High-Temperature Space Power Systems

J. J. Clark, P. E. Kueser, D. H. Lane, et al.

Property data of magnetic materials for use in high temperature liquid alkali-metal space power systems.

NASA SP-3043

N68-17624

Avail NTIS

325 pp

1967

A Numerical Least-Square Method for Resolving Complex Pulse Height Spectra

R. L. Schmadebeck, J. I. Trombka

NASA SP-3044

N68-29520

Avail NTIS

175 pp

1968

Compressed Gas Handbook

*R. A. Cota, J. S. Kunkle,
S. D. Wilson*

High pressure compressible flow systems in space vehicle ground support equipment.

NASA SP-3045
N69-26987
Avail GPO

572 pp
1969

Real-Gas Effects in Critical Flow Through Nozzles and Thermodynamic Properties of Nitrogen and Helium at Pressures to 300×10^5 Newtons Per Square Meter

R. C. Johnson

FORTRAN 4 subroutines for calculating critical flow factor to determine mass flow rate of gaseous helium and nitrogen through critical flow nozzles.

NASA SP-3046
N69-16098
Avail NTIS

204 pp
1968

Two-Micron Sky Survey: A Preliminary Catalog

R. B. Leighton, G. Neugebauer

Two-micron sky survey catalog of celestial objects.

NASA SP-3047
N69-37993
Avail NTIS

316 pp
1969

Charts for Interpolation of Local Skin Friction From Experimental Turbulent Velocity Profiles

J. M. Allen, D. H. Tudor

Graphical interpolation charts of local skin friction from compressible velocity profiles.

NASA SP-3048
N69-25391
Avail NTIS

42 pp
1969

Computer-Aided Filter Design Manual

S. Gussow, G. Weathers

Computerized telemetry filter design.

NASA SP-3049
N69-35816
Avail NTIS

106 pp
1969

Tabulations of Configuration Factors Between Any Two Spheres and Their Parts

N. T. Grier

Tabulated values of configuration factors between two spheres and parts of two spheres.

NASA SP-3050
N69-37777
Avail NTIS

424 pp
1969

Space Materials Handbook

J. B. Rittenhouse, J. B. Singletary

Aerospace environment and effects on materials, spacecraft material selection, and biological interaction with spacecraft materials. Third edition.

NASA SP-3051
N70-21226
Avail NTIS

760 pp
1969

Semiclassical Elastic Scattering Cross Sections for a Central Field Potential Function

J. R. Stalcop

NASA SP-3052
N70-14494
Avail NTIS

299 pp
1969

Relative Geometries of the Earth, Sun, and Mars From the Year 1973 to the Year 2000

S. W. Souders

NASA SP-3053
N70-21849
Avail NTIS

130 pp
1970

World Maps of Constant B, L, and Flux Contours

E. G. Stassinopoulos

NASA SP-3054
N70-28118
Avail NTIS

362 pp
1970

A Ray-Tracing Digital Computer Program for the Study of Magnetospheric Duct Propagation

J. Ramasastry, E. J. Walsh

NASA SP-3055
N70-35774
Avail NTIS

299 pp
1970

Average Energies of Ground and Singly and Doubly Excited Configurations in Highly Ionized Atoms (Electron Numbers N = 3 to N = 20)

S. O. Kastner, Y. Shadmi

NASA SP-3056
N71-20535
Avail NTIS

258 pp
1971

Lunar Ephemeris and Selenographic Coordinates of the Earth and Sun for 1971 and 1972

A. D. Hartung

Lunar ephemeris and selenographic coordinates of Earth and Sun for 1971 and 1972, related geometric information, tables and graphs.

NASA SP-3057
N72-23896
Avail NTIS

437 pp
1972

Lunar Ephemeris and Selenographic Coordinates of the Earth and Sun for 1973 and 1974

A. D. Hartung

NASA SP-3058
N72-23897
Avail NTIS

442 pp
1972

Lunar Ephemeris and Selenographic Coordinates of the Earth and Sun for 1975 and 1976

A. D. Hartung

NASA SP-3059
N72-26730
Avail NTIS

441 pp
1972

Lunar Ephemeris and Selenographic Coordinates of the Earth and Sun for 1977 and 1978

A. D. Hartung

NASA SP-3060
N72-30820
Avail NTIS

442 pp
1972

Lunar Ephemeris and Selenographic Coordinates of the Earth and Sun for 1979 and 1980

A. D. Hartung

NASA SP-3061
N72-30819
Avail NTIS

442 pp
1972

Lunar Ephemeris and Selenographic Coordinates of the Earth and Sun for 1981 and 1982

A. D. Hartung

NASA SP-3062
N72-30828
Avail NTIS

441 pp
1972

Lunar Ephemeris and Selenographic Coordinates of the Earth and Sun for 1983 and 1984

A. D. Hartung

NASA SP-3063
N72-31864
Avail NTIS

437 pp
1972

Compilation of Ultraviolet Photoabsorption Cross Sections for Atoms Between 5 and 3500 Å

R. D. Hudson, L. J. Kieffer

Photoabsorption cross section data as function of wavelength for 24 atoms.

NASA SP-3064
N71-26087
Avail NTIS

61 pp
1971

Hydrogen Line Blanketed Model Stellar Atmospheres

D. A. Klinglesmith

NASA SP-3065
N71-20410
Avail NTIS

264 pp
1971

Partition Functions and Equations of State in Plasmas

D. Fischel, W. M. Sparks

NASA SP-3066
N71-28173
Avail NTIS

617 pp
1971

Radio Frequency Interference Handbook

R. E. Taylor

STADAN radio frequency interference problems involving electromagnetic compatibility and lightning.

NASA SP-3067
N72-11153
Avail NTIS

273 pp
1971

Atomic Emission Line Wavelength Calculations below 2000 Angstroms for Lithium II Through Cobalt XXVI

M. D. Williams

NASA SP-3068
N72-12684
Avail NTIS

118 pp
1971

Thermodynamic Properties and Theoretical Rocket Performance of Hydrogen to 100 000 K and $1.01325 \times 10^8 \text{ N/m}^2$

R. W. Patch

Thermodynamic properties and theoretical rocket performance of hydrogen to 100 000 K and $1.01325 \times 10^8 \text{ N/m}^2$ for chemical equilibrium in Debye-Hückel and ideal gas approximations.

NASA SP-3069
N72-12776
Avail NTIS

114 pp
1971

Summary of Transformation Equations and Equations of Motion Used in Free Flight and Wind Tunnel Data Reduction and Analysis

T. G. Gainer, S. Hoffman

Basic formulations for developing coordinate transformations and equations of motion used with free flight and wind tunnel data reduction.

NASA SP-3070
N72-26475
Avail NTIS

127 pp
1972

**ASRDI Oxygen Technology Survey.
Volume I: Thermophysical Properties**
H. M. Roder, L. A. Weber
Handbook of thermophysical properties of liquid and gaseous oxygen.
NASA SP-3071
N73-13952
Avail NTIS

432 pp
1972

**ASRDI Oxygen Technology Survey.
Volume II: Cleaning Requirements,
Procedures, and Verification
Techniques**

H. Bankaitis, C. F. Schueler
Cleaning processes and postcleaning inspection procedures for meeting oxygen system cleaning requirements.
NASA SP-3072
N73-15155
Avail NTIS

80 pp
1972

**ASRDI Oxygen Technology Survey.
Volume IV: Low Temperature
Measurement**

L. L. Sparks
NASA SP-3073
N74-27190
Avail NTIS

167 pp
1974

**Tables of Critical-Flow Functions and
Thermodynamic Properties for Methane
and Computational Procedures for Both
Methane and Natural Gas**

R. C. Johnson
Calculation of mass flow rate of methane and natural gas through nozzles.
NASA SP-3074
N73-15309
Avail NTIS

73 pp
1972

**A Computer Program to Determine the
Possible Daily Release Window for Sky
Target Experiments**

N. H. Michaud
NASA SP-3075
N74-11985
Avail GPO

151 pp
1973

**ASRDI Oxygen Technology Survey.
Volume III: Heat Transfer and Fluid
Dynamics—Abstracts of Selected
Technical Reports and Publications**

A. F. Schmidt
Abstracts of selected reports on heat transfer and fluid dynamics with applicability to oxygen systems.
NASA SP-3076
N73-16932
Avail NTIS

177 pp
1972

**ASRDI Oxygen Technology Survey.
Volume VII: Characteristics of Metals
That Influence System Safety**

J. J. Pelouch, Jr.

NASA SP-3077
N74-23117
Avail NTIS

74 pp
1974

**Tables for Supersonic Flow of Helium
Around Right Circular Cones at Zero
Angle of Attack**

J. L. Sims

Analysis of characteristics of supersonic flow of helium around right circular cones at zero angle of attack and Mach numbers from 1.5 to 30.0.

NASA SP-3078
N73-27208
Avail GPO

28 pp
1973

**Nondestructive Evaluation Technique
Guide**

A. Vary

Seventy nondestructive evaluation techniques, a description of each technique, physical principles involved, example applications, limitations, schematic illustrations.

NASA SP-3079
N73-31441
Avail NTIS

110 pp
1973

**Handbook of Infrared Radiation From
Combustion Gases**

*C. B. Ludwig, W. Malkimus,
J. E. Reardon, et al.*

Handbook on radiant emission and absorption of combustion gases for application to design of rocket combustion chambers and exhausts, turbojet engines, and industrial furnaces.

NASA SP-3080
N73-27807
Avail NTIS

497 pp
1973

**Auroral Bremsstrahlung at Balloon
Altitudes**

*S. M. Seltzer, M. J. Berger,
T. Rosenberg*

Auroral bremsstrahlung flux spectra at various atmospheric depths.

NASA SP-3081
N73-32293
Avail NTIS

28 pp
1973

**Revised Tables of Airspeed, Altitude,
and Mach Number Presented in the
International System of Units**

M. S. Benner, R. H. Sawyer

NASA SP-3082
N74-14082
Avail NTIS

42 pp
1973

**ASRD^I Oxygen Technology Survey.
Volume V: Density and Liquid Level
Measurement Instrumentation for the
Cryogenic Fluids Oxygen, Hydrogen,
and Nitrogen**

H. M. Roder

NASA SP-3083	
N74-22322	72 pp
Avail NTIS	1974

**ASRD^I Oxygen Technology Survey.
Volume VI: Flow Measurement
Instrumentation**

D. B. Mann

NASA SP-3084	
N74-28938	109 pp
Avail NTIS	1974

**Tables and Charts of Equilibrium Nor-
mal Shock and Shock-Tube Solutions
for Helium-Hydrogen Mixtures With
Velocities to 70 km/sec**

C. G. Miller III, S. E. Wilder

NASA SP-3085	
N74-34701	812 pp
Avail NTIS	1974

**Near-Infrared Spectra of Jupiter,
Saturn, and Uranus**

A. E. Potter

NASA SP-3086	
N74-33269	252 pp
Avail NTIS	1974

**Tables and Charts of Equilibrium Nor-
mal Shock and Shock-Tube Solutions
for Pure Hydrogen With Velocities to
70 km/sec**

C. G. Miller III, S. E. Wilder

NASA SP-3087	
N75-13197	230 pp
Avail NTIS	1974

**Thermodynamic and Related Properties
of Parahydrogen From the Triple Point
to 300 K at Pressures to 1000 Bar**

A. L. Weber

NASA SP-3088	
N75-22407	105 pp
Avail NTIS	1975

**Hydrogen Technology Survey: Thermo-
physical Properties**

R. D. McCarty

Thermodynamic functions, transport properties, and physical properties of liquid and gaseous hydrogen.

NASA SP-3089	
N76-11297	535 pp
Avail NTIS	1975

**ASRD^I Oxygen Technological Survey.
Volume IX: Oxygen Systems Engi-
neering Review**

H. W. Schmidt, D. E. Forney

NASA SP-3090	
N75-33259	218 pp
Avail NTIS	1975

**Synoptic Analyses, 5-, 2-, and
0.4-Millibar Surfaces for January 1972
Through June 1973**

Data from meteorological rocketsonde and satellite radiance measurements used to analyze high-altitude synoptic charts.

NASA SP-3091	
N75-3091	208 pp
Avail NTIS	1975

**ASRD^I Oxygen Technology Survey.
Volume VIII: Pressure Measurement**

J. M. Arvidson, J. A. Brennan

NASA SP-3092	
N75-28070	104 pp
Avail NTIS	1975

**Normal- and Oblique-Shock Flow Pa-
rameters in Equilibrium Air Including
Attached-Shock Solutions for Surfaces
at Angles of Attack, Sweep, and
Dihedral**

J. L. Hunt, S. W. Souders

NASA SP-3093	
N76-12019	156 pp
Avail NTIS	1975

Spacecraft Materials Guide

C. L. Staugaitis

Low density and syntactic foams, electrical encapsulants, optical glasses, interference filters, lamellar lubricants, soldering and brazing processes.

NASA SP-3094	
N75-24848	77 pp
Avail NTIS	1975

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March 19-20, 1974**

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**Molecular Physics of Equilibrium
Gases: A Handbook for Engineers**
C. F. Hansen

NASA SP-3096
N76-22004
Avail NTIS

329 pp
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**Tables and Charts of Equilibrium Ther-
modynamic Properties of Carbon Diox-
ide for Temperatures to 25 000 K**

C. G. Miller III, S. E. Wilder

NASA SP-3097
N76-32272
Avail NTIS

493 pp
1976

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mal Shock and Shock Tube Properties
for Pure Argon With Velocities to 18
km/sec**

C. G. Miller III, S. E. Wilder

NASA SP-3098
N76-29536
Avail NTIS

302 pp
1976

**Tables and Charts of Equilibrium Ther-
modynamic Properties of Ammonia for
Temperatures From 500 to 50 000 K**

*A. L. Simmonds, C. G. Miller III,
J. E. Nealy*

NASA SP-3099
N76-30097
Avail NTIS

259 pp
1976

**Tables and Charts of Equilibrium
Normal-Shock and Shock-Tube Proper-
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Velocities From 1 to 16 km/sec**

C. G. Miller III, S. E. Wilder

NASA SP-3100
N77-16292
Avail NTIS

318 pp
1976

**Cryogenic Adhesives and Sealants—
Abstracted Publications**

F. R. Williamson, N. A. Olien
Abstracts containing experimental data on
the properties of adhesives and sealants at
cryogenic temperatures.

NASA SP-3101
N77-20257
Avail NTIS

156 pp
1977

**Synoptic Analyses, 5-, 2-, and
0.4-Millibar Surfaces for July 1973
Through June 1974**

Satellite radiance measurements and data
from meteorological rocketsondes used to
analyze high-altitude constant pressure
charts.

NASA SP-3102
N77-15583
Avail NTIS

144 pp
1976

Histories and Chronologies

Project Mercury: A Chronology

J. M. Grimwood

Events leading to the project, test objectives, flight data summary, launch site summary.

NASA SP-4001

N63-21848

Avail GPO

250 pp

1963

Project Gemini Technology and Operations: A Chronology

*J. M. Grimwood, B. C. Hacker,
P. J. Vorzimer*

Chronological study of design and development of Gemini project.

NASA SP-4002

N69-36501

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324 pp

1969

Space Medicine in Project Mercury

M. M. Link

Medical aspects of Project Mercury including astronaut selection and training, results of laboratory tests and physiological data, and biomedical planning; for space flights.

NASA SP-4003

N65-32394

Avail NTIS

207 pp

1965

Astronautics and Aeronautics, 1963: Chronology on Science, Technology, and Policy

Chronological compilation of events relating to space exploration and exploitation.

NASA SP-4004

N65-11866

Avail NTIS

615 pp

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E. M. Emme

Space probes and manned space flights.

NASA SP-4005

N65-27641

Avail NTIS

533 pp

1965

Astronautics and Aeronautics, 1965: Chronology on Science, Technology, and Policy

NASA SP-4006

N67-11323

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686 pp

1966

Astronautics and Aeronautics, 1966: Chronology on Science, Technology, and Policy

NASA launchings, space probes, manned space flights, and other space-related and aeronautics events and discoveries in 1966.

NASA SP-4007

N67-38808

Avail GPO

486 pp

1967

Astronautics and Aeronautics, 1967: Chronology on Science, Technology, and Policy

NASA SP-4008

N69-25647

Avail GPO

495 pp

1968

The Apollo Spacecraft: A Chronology

Volume I. Through November 7, 1962.

I. D. Ertel, M. L. Morse

NASA SP-4009

N69-32021

Avail GPO

275 pp

1969

Volume II. November 8, 1962–September 30, 1964.

M. L. Morse, J. K. Bays

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N74-12507

Avail NTIS

290 pp

1973

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C. G. Brooks, I. D. Ertel

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Volume IV. January 21, 1966–July 13, 1974.

*I. D. Ertel, R. W. Newkirk,
C. G. Brooks*

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N80-20437

Avail GPO

476 pp

1978

Astronautics and Aeronautics, 1968: Chronology on Science, Technology, and Policy

Chronology on aerospace events and personalities.

NASA SP-4010

N70-27240

Avail GPO

437 pp

1969

Skylab: A Chronology*R. W. Newkirk, I. D. Ertel,
C. G. Brooks*

Early space station activities, Apollo applications, and Skylab development and operations. Includes appendix on experiments conducted on Skylab.

NASA SP-4011
N78-25115 476 pp
Avail GPO 1977

**NASA Historical Data Book, 1958-1968.
Volume I: NASA Resources***J. Vannimmen, L. C. Bruno,
R. L. Rosbott*

Presents a data base on the tangible aspects of NASA and its programs. Organization and management.

NASA SP-4012
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Avail NTIS 1976

**Astronautics and Aeronautics, 1969:
Chronology on Science, Technology,
and Policy**

NASA SP-4014
N71-32246 539 pp
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**Astronautics and Aeronautics, 1970:
Chronology on Science, Technology,
and Policy**

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N73-23833 519 pp
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and Policy**

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N74-14683 481 pp
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and Policy**

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N75-10129 590 pp
Avail GPO 1974

**Astronautics and Aeronautics, 1973:
Chronology on Science, Technology and
Policy**

NASA SP-4018
N76-17166 487 pp
Avail GPO 1975

**Astronautics and Aeronautics, 1974:
A Chronology***N. L. Brun*

NASA SP-4019
N78-12997 323 pp
Avail GPO 1977

**Astronautics and Aeronautics, 1975:
A Chronology***N. L. Brun, E. H. Ritchie*

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Avail GPO

**An Administrative History of NASA,
1958-1963***R. L. Rosbott*

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N66-28006 456 pp
Avail NTIS 1966

**This New Ocean. A History of Project
Mercury***C. C. Alexander, J. M. Grimwood,
L. S. Swenson, Jr.*

Technological and managerial history of Mercury project, including bibliography.

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Avail NTIS 1966

Vanguard: A History*M. C. Green, M. Lomask*

Origin, course of development, and results of Vanguard Project.

NASA SP-4202
N71-18019 325 pp
Avail NTIS 1970

**On the Shoulders of Titans: A History
of Project Gemini***B. C. Hacker*

Gemini, the intermediate manned space flight program between the Mercury and Apollo programs, was an important prerequisite to the lunar expeditions.

NASA SP-4203
N78-20151 634 pp
Avail GPO 1977

**Moonport: A History of Apollo Launch
Facilities and Operations***C. D. Benson, W. B. Faherty*

Development of the Apollo launch facilities and operations from the beginning of the design through the final launch.

NASA SP-4204
N79-12127 643 pp
Avail GPO 1978

Chariots for Apollo: A History of Manned Lunar Spacecraft

*C. G. Brooks, J. M. Grimwood,
L. S. Swenson, Jr.*

Review of the Apollo lunar exploration program with a focus on the spacecraft, including command and service modules and the lunar module.

NASA SP-4205
N79-28203 553 pp
Avail GPO 1979

The Partnership: A History of the Apollo-Soyuz Test Project

E. C. Ezell, L. N. Ezell

Correspondence, interviews, official documents, scientific experiments, launch vehicles, photographs.

NASA SP-4209
N79-10074 570 pp
Avail GPO 1978

Lunar Impact: A History of Project Ranger

R. C. Hall

Basic management techniques, flight operating procedures, and technology for NASA's unmanned lunar missions.

NASA SP-4210
N78-15149 467 pp
Avail GPO 1977

Venture Into Space: Early Years of Goddard Space Flight Center

A. Rosenthal

History of NASA Goddard Space Flight Center through 1963.

NASA SP-4301
N68-30317 369 pp
Avail NTIS 1968

Adventures in Research: A History of Ames Research Center, 1940-1965

E. P. Hartman

Historical survey of aeronautical research and development at Ames Research Center from 1936 to 1965.

NASA SP-4302
N70-41479 673 pp
Avail GPO 1970

History of NASA Sounding Rockets

W. R. Corliss

Historical summary of the development and use of sounding rockets.

NASA SP-4401
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Avail GPO 1971

Origins of NASA Names

*H. T. Wells, S. H. Whiteley,
C. E. Karegeannes*

Selection of names for launch vehicles, spacecraft, manned spaceflight programs, sounding rockets, and field installations through 1974.

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N77-16981 237 pp
Avail GPO 1976

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F. W. Anderson

A brief history of aeronautics and space exploration from Kitty Hawk to walks on the Moon, space probes, and Skylab.

NASA SP-4403
N76-26147 107 pp
Avail GPO 1976

Liquid Hydrogen as a Propulsion Fuel, 1945-1959

J. L. Sloop

NASA SP-4404
N79-16994 346 pp
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Unmanned Space Project Management: Surveyor and Lunar Orbiter

E. H. Kloman

Analysis of management procedures applied to Surveyor and Lunar Orbiter projects.

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Avail GPO 1972

The Planetary Quarantine Program: Origins and Achievements, 1956-1973

C. R. Phillips

NASA SP-4902
N75-14670 61 pp
Avail GPO 1974

Technology Utilization

An Improved Precision Height Gage

L. B. Vale

NASA SP-5001	
N64-14062	13 pp
Avail NTIS	1963

Soldering Electrical Connections

Techniques and materials for soldering electrical connections.

NASA SP-5002	
N67-36660	67 pp
Avail GPO	1967

Selected Welding Techniques, Part I

H. M. Nance

Aluminum sheet plate welding tools and techniques.

NASA SP-5003	
N64-16859	31 pp
Avail GPO	1963

Space Batteries

H. T. Francis

Three sealed battery systems—nickel-cadmium, silver-cadmium, and silver-zinc—for spacecraft power use.

NASA SP-5004	
N64-18052	60 pp
Avail GPO	1964

The Retrometer: A Light Beam Communications System

N. E. Thomas

Voice communications system using light beams.

NASA SP-5005	
N64-18503	20 pp
Avail NTIS	1964

The Measurement of Blood Pressure in the Human Body

W. H. Bickley, C. R. Smith

NASA SP-5006	
N64-17838	39 pp
Avail GPO	1964

Measurement of the Heartbeat of Bird Embryos With a Micrometeorite Transducer

V. L. Rogallo

Heartbeat measurement of bird embryos with micrometeorite transducer as ballistocardiograph.

NASA SP-5007	
N64-19015	16 pp
Avail NTIS	1964

Selected Welding Techniques, Part II

Aluminum welding techniques for space vehicle applications.

NASA SP-5009	
N64-32642	39 pp
Avail GPO	1964

Selected Shop Techniques

Technology handbook for machinists, mechanics, and technicians—shock absorbers and protective devices, machining, metal forming, welding and brazing, and precision tools.

NASA SP-5010	
N65-34426	91 pp
Avail NTIS	1965

Welding for Electronic Assemblies

Resistance spot-welding of interconnecting electronic components.

NASA SP-5011	
N65-13535	86 pp
Avail NTIS	1964

Effects of Low Temperatures on Structural Metals

*A. G. Imgram, W. S. Lyman,
H. L. Martin*

Cryogenic temperature investigations of aluminum, nickel, steel, titanium, and magnesium alloys.

NASA SP-5012	
N65-11046	60 pp
Avail NTIS	1964

Effects of Low Temperatures on the Mechanical Properties of Structural Metals

*J. E. Campbell, A. G. Imgram,
H. L. Martin, et al.*

Low temperature effects on tensile properties of aluminum, magnesium, nickel, steel, and titanium alloys.

NASA SP-5012(01)	
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Avail NTIS	1968

Precision Tooling Techniques

Precision tools, machine tools, and measuring apparatus.

NASA SP-5013	
N64-33608	29 pp
Avail GPO	1964

NASA Contributions to the Technology of Inorganic Coatings

J. D. Plunkett

Inorganic coating technology and commercial implications.

NASA SP-5014
N65-15535
Avail GPO

263 pp
1964

Conference on New Technology

Conference on aerospace technology: materials, fabrication processes, electric power generation, instrumentation, lubrication, superconductivity, and plasma physics.

NASA SP-5015
N64-32767
Avail GPO

161 pp
1964

A Technique for Joining and Sealing Dissimilar Materials

Annular reentrant cavity filled with low melting point alloy for sealing and joining dissimilar materials—cryogenic applications.

NASA SP-5016
N65-26638
Avail NTIS

11 pp
1965

Metal-Forming Techniques

I. I. Islamoff

Metal forming techniques for sheet and plate materials used by aircraft and aerospace industry.

NASA SP-5017
N65-33365
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59 pp
1965

Transforming and Using Space-Research Knowledge—Ten Diversified Views

Space technology applications to industrial process development—welding, turbopumps, human waste as fuel, plastics, neurophysiology and computers. Symposium, June 1964.

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N65-18526
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111 pp
1964

NASA Contributions to Advanced Valve Technology

*L. C. Burmeister, J. B. Loser,
E. C. Sneegas*

NASA SP-5019
N68-10402
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190 pp
1967

Vibrating Diaphragm Pressure Transducer

J. D. King

Vibrating diaphragm transducer for pressure measurements in wind tunnels—construction, sensitivity, stability, energy losses, and cost estimates.

NASA SP-5020
N66-32281
Avail NTIS

28 pp
1964

Index to NASA Tech Briefs, Issue Number 1

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N65-15153
Avail NTIS

54 pp
1965

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NASA SP-5021(02)
N65-31135
Avail NTIS

45 pp
1965

Cumulative Index to NASA Tech Briefs, 1963-1965

Annotated bibliography of NASA technical briefs on electrical, energy sources, materials, life sciences, and mechanical information.

NASA SP-5021(03)
N66-17584
Avail NTIS

138 pp
1966

Index to NASA Tech Briefs, January-June 1966

NASA SP-5021(04)
N66-34366
Avail NTIS

62 pp
1966

Cumulative Index to NASA Tech Briefs, 1963-1966

Electrical and electronic, physical science and energy sources, materials and chemistry, life science, and mechanical innovations.

NASA SP-5021(05)
N67-27296
Avail NTIS

166 pp
1967

Index to NASA Tech Briefs, January-June 1967

NASA SP-5021(06)
N67-35596
Avail NTIS

47 pp
1967

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Cumulative Index to NASA Tech Briefs, January-December 1968	NASA SP-5021(08) N69-90047 Avail NTIS	156 pp 1969	Cumulative Index to NASA Tech Briefs, 1970-1975	NASA SP-5021(18) N80-10969 Avail NTIS	767 pp 1979
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Cumulative Index to NASA Tech Briefs, 1963-1967	Cumulative index to NASA survey on technology utilization of aerospace research output. NASA SP-5021(11) N68-25221 Avail NTIS	376 pp 1968	Micropower Logic Circuits	<i>J. C. Sturman</i> Digital logic circuits for space vehicle logic systems for application in nonspace computer systems. NASA SP-5022 N65-23694 Avail NTIS	21 pp 1965
Index to NASA Tech Briefs, 1970	NASA SP-5021(12) N71-28193 Avail NTIS	295 pp 1971	Medical and Biological Applications of Space Telemetry	NASA SP-5023 N65-34001 Avail NTIS	70 pp 1965
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Index to NASA Tech Briefs, 1973	NASA SP-5021(15) N75-17285 Avail NTIS	115 pp 1974	Thermal Insulation Systems: A Survey	<i>I. A. Black, P. E. Glaser, R. S. Lindstrom, et al.</i> Thermal insulation systems for cryogenic storage and high temperature protection. NASA SP-5027 N67-38580 Avail NTIS	154 pp 1967
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Technical and Economic Status of Magnesium-Lithium Alloys

P. D. Frost

NASA SP-5028
N65-29952
Avail NTIS

51 pp
1965

Elastic Orifices for Gas Bearings

Elastic orifice in externally pressurized gas bearings.

NASA SP-5029
N65-34226
Avail NTIS

17 pp
1965

Symposium on Technology Status and Trends

Aerospace technological developments, trends, and potential commercial applications. Symposium, April 1965.

NASA SP-5030
N66-17706
Avail NTIS

239 pp
1966

Microelectronics in Space Research

R. M. Burger

Technology survey of microelectronics in space research.

NASA SP-5031
N66-10414
Avail NTIS

131 pp
1965

Plasma Jet Technology

*J. B. Bond, P. R. Dennis,
D. W. Gates, et al.*

Survey on industrial applications of plasma arc devices.

NASA SP-5033
N65-34909
Avail NTIS

207 pp
1965

The Electromagnetic Hammer

Magnetic coil design and development for electromagnetic hammer to remove distortion from welded components.

NASA SP-5034
N66-12344
Avail NTIS

28 pp
1965

Tungsten Powder Metallurgy

V. D. Barth

Tungsten powder metallurgy technology related to space vehicles and less traditional applications.

NASA SP-5035
N66-10415
Avail NTIS

46 pp
1965

Bibliography on Electromechanical Transducers

Annotated bibliography on applications of electromechanical transducers.

NASA SP-5036
N66-17359
Avail NTIS

44 pp
1966

Bibliography on Solid Lubricants

NASA SP-5037
N66-17358
Avail NTIS

34 pp
1966

Magnetic Tape Recording

S. W. Athey

Types of magnetic recording, elements of the tape recorder, recording methods, recorder electronics.

NASA SP-5038
N66-14159
Avail NTIS

327 pp
1966

Structural Design Concepts: Some NASA Contributions

L. A. Scipio, A. L. Scipio

Structural design, reinforced and composite materials and their applications.

NASA SP-5039
N67-38491
Avail NTIS

180 pp
1967

Methods of Brazing Aluminum to Stainless Steel for High-Stress-Fatigue Applications

D. C. Martin

Brazing aluminum to titanium coated stainless steel to minimize formation of intermetallic compounds in joint.

NASA SP-5040
N68-22778
Avail NTIS

16 pp
1968

NASA Contributions to Cardiovascular Monitoring

W. J. Jones, W. C. Simpson

NASA SP-5041
N66-32925
Avail NTIS

48 pp
1966

Earthquake Prediction From Laser Surveying

R. A. Fowler

Geodetic laser system for earthquake prediction and engineering research.

NASA SP-5042
N68-23706
Avail NTIS

37 pp
1968

Flat Conductor Cable Technology
Equipment specifications and electrical properties of flat conductor cable systems.

NASA SP-5043
N68-28879
Avail NTIS

54 pp
1968

Selected Casting Techniques

Method for casting and construction of wind tunnel models.

NASA SP-5044
N66-23562
Avail NTIS

27 pp
1965

Contamination Control Principles

NASA SP-5045
N68-10384
Avail NTIS

51 pp
1967

Selected Electronic Circuitry

Electronic circuit technology for industrial and commercial applications.

NASA SP-5046
N67-15672
Avail NTIS

100 pp
1966

Teleoperators and Human Augmentation

W. R. Corliss, E. G. Johnson

Design and application potentials of general purpose, dexterous, cybernetic machines for human augmentation.

NASA SP-5047
N68-18870
Avail NTIS

273 pp
1967

Applications of Systems Analysis Models

Application of NASA mathematical management models and systems analyses in private industry and economy.

NASA SP-5048
N69-10662
Avail GPO

73 pp
1968

Visual Information Display Systems

Visual information display systems that are computer connected or updated with computer generated information.

NASA SP-5049
N68-32159
Avail NTIS

101 pp
1968

NASA Contributions to Development of Special-Purpose Thermocouples

C. E. Moeller

NASA SP-5050
N68-35620
Avail NTIS

97 pp
1968

The Metallurgy, Behavior, and Application of the 18-Percent Nickel Maraging Steels

A. M. Hall, C. J. Slunder

Metallurgy, behavior, and application of 18 percent nickel maraging steels.

NASA SP-5051
N69-14193
Avail GPO

143 pp
1968

Joining Ceramics and Graphite to Other Materials

*R. M. Evans, R. E. Monroe,
H. E. Pattee*

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N69-14241
Avail GPO

89 pp
1968

Conference on Selected Technology for the Petroleum Industry

Selected aerospace technology for petroleum industry representatives—combustion, heat transfer, surface physics and chemistry, lubricants and bearings, hydrodynamics. Conference, December 1965.

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Avail NTIS

186 pp
1966

NASA Contributions to Bioinstrumentation Systems

*B. Ettelson, M. Klagsbrun,
D. Ukkestad, et al.*

NASA SP-5054
N69-14860
Avail GPO

101 pp
1968

"Nonglassy" Inorganic Fibers and Composites

C. G. Harman

Theory and developments in fiber-reinforced composites, whiskers, fibers, and metal wires.

NASA SP-5055
N66-34367
Avail NTIS

44 pp
1966

Application of Biogeochemistry to Mineral Prospecting

NASA SP-5056
N69-10492
Avail NTIS

135 pp
1968

Selected Technology for the Electric Power Industry

Selected conference papers on NASA technology utilization for electric power industry. Conference, September 1968.

NASA SP-5057
N69-12575
Avail NTIS

334 pp
1968

NASA Contributions to Fluid-Film Lubrication

Survey of incompressible and compressible fluid film hydrostatic and hydrodynamic lubrication.

NASA SP-5058
N69-28592
Avail GPO

202 pp
1969

Solid Lubricants

M. E. Campbell

Survey of development in solid lubrication.

NASA SP-5059
N72-25476
Avail GPO

140 pp
1972

Some New Metal and Metal-Ceramic Composites

S. Korman

NASA SP-5060
N67-13531
Avail NTIS

31 pp
1966

Commercial Potentials of Semipermeable Membranes

*E. J. Henley, H. K. Staffin,
S. B. Tuwiler*

Semipermeable membrane technology for commercial and industrial applications.

NASA SP-5061
N67-17822
Avail NTIS

47 pp
1967

High-Velocity Metalworking

*H. M. Gadberry, J. B. Loser,
M. C. Noland, et al.*

High velocity electromagnetic, electrohydraulic, explosive, and pneumatic-mechanical methods of metal working.

NASA SP-5062
N67-26560
Avail GPO

187 pp
1967

Vacuum Switchgear

W. S. Emmerich

Survey of vacuum switchgear technology.

NASA SP-5063
N67-18626
Avail NTIS

41 pp
1967

NASA Contributions to Metal Joining

J. Heuschkel, W. J. Reichenecker

Survey of NASA supported metals joining research having industrial applications.

NASA SP-5064
N67-17823
Avail NTIS

141 pp
1967

Selected Machining and Metal Fabricating Technology

Machine tools and metal fabricating technology developments.

NASA SP-5065
N67-25855
Avail NTIS

30 pp
1967

Adhesives, Sealants, and Gaskets

S. N. Glarum, R. B. Perkins

Adhesives, sealants, and gaskets developed to operate in space environment.

NASA SP-5066
N67-16060
Avail NTIS

63 pp
1967

Assessing Technology Transfer

G. J. Howick, R. L. Lesber

Transfer and utilization of new technology in United States.

NASA SP-5067
N67-13187
Avail NTIS

121 pp
1966

Properties and Current Applications of Magnesium-Lithium Alloys

P. D. Frost, R. J. Jackson

Physical properties, metallurgical processes, and applications of magnesium-lithium alloys.

NASA SP-5068
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Avail NTIS

51 pp
1967

Mathematical Computer Programs

J. Arnold, T. Letb, J. Simpson

Mathematical programs and programming techniques for digital computer operations.

NASA SP-5069
N67-14111
Avail NTIS

26 pp
1966

Teleoperator Controls

W. R. Corliss, E. G. Johnsen

Engineering problems survey on teleoperator control systems.

NASA SP-5070
N69-21478
Avail NTIS

169 pp
1968

Induction Heating Advances: Applications to 5800°F

A. F. Leatherman, D. E. Stutz

Technology utilization of induction heating systems up to 5800°F.

NASA SP-5071
N69-23643
Avail GPO

46 pp
1969

Air Pollution Monitoring Instrumentation

A. Lieberman, P. Schipma

Air pollution monitoring instrumentation developed for aerospace uses surveyed for industrial applications.

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C. H. Vermillion

Equipment specifications and engineering drawings for automatic picture transmission ground stations.

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A. J. Derr

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G. J. Deboo

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Selected Developments in Laser Wire Stripping

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T. M. Weathers

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Principles and applications of nondestructive tests.

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P. Zilczer
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Fasteners and Fastening Techniques: A Compilation	Machine Tools and Fixtures: A Compilation (cont.)
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Electronic Instrumentation Techniques and Equipment: A Compilation	Metallography and Metals Testing Techniques: A Compilation
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Graphic Arts Techniques and Equipment: A Compilation	Valve Technology: A Compilation
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Low Temperature Mechanical Properties of Various Alloys: A Compilation	Materials Handling: A Compilation
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	NASA SP-5941(01)
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Electrical and Electronic Devices and Components: A Compilation	Optics and Lasers: A Compilation
NASA SP-5971(01) N75-33324 Avail NTIS	29 pp 1975
Electronic Components Subsystems and Equipment: A Compilation	Optical Technology: A Compilation
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NASA SP-5972(01) N75-12200 Avail NTIS	31 pp 1974
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A Compilation**
NASA SP-5979(01)
N75-33770
Avail NTIS

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Management Evaluation and Analysis Standards

Reliability Program Evaluation Procedures

NASA SP-6002
N63-21912 52 pp
Avail NTIS 1963

Quality Program Evaluation Procedures

NASA SP-6003
N63-21435 69 pp
Avail NTIS 1963

Mass Properties Standards

M. L. Seccomb
System for management of mass properties during procurement and use of space vehicles.
NASA SP-6004
N65-24019 92 pp
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Electrical Power Management Standard

Management standards for electrical power control during procurement and use of space vehicles in Apollo project.
NASA SP-6005
N65-27944 36 pp
Avail NTIS 1965

Weight/Performance Management Survey Manual

Weight/performance management survey manual for Apollo project.
NASA SP-6006
N65-34436 34 pp
Avail NTIS 1965

Electrical Power Management Survey Manual

Procedures for management audit of NASA Apollo Program.
NASA SP-6007
N65-33831 33 pp
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Structural Systems and Program Decisions

Computer weight/performance prediction method to assess design and program and to optimize structural systems similar to those of Saturn V for management planning.

Volume 1

NASA SP-6008
N66-31233 437 pp
Avail NTIS 1966

Volume 2

NASA SP-6008(01)
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Forecasts and Appraisals for Management Evaluation

Weight/performance data, mathematical models, probable error relationships for Apollo project.

Volume 1

NASA SP-6009
N66-29966 229 pp
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An Introduction to the Evaluation of Reliability Programs

D. S. Liberman, A. J. Slechter
Basic fundamentals applying to evaluation of reliability program effectiveness.

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N67-19275 67 pp
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R. E. Boss, C. H. McGaffin
Design review procedures for space system contractors to optimize design and functional performance in terms of total system requirements.

NASA SP-6502
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Introduction to the Derivation of Mission Requirements Profiles for System Elements

Development of mission requirement profile for subsystem components from overall system profile.

NASA SP-6503
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Failure Reporting and Management Techniques in the Surveyor Program

*E. F. Grant, D. S. Liberman,
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N67-90166 43 pp
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Parts and Materials Application Review for Space Systems

*R. E. Boss, J. P. Craig,
S. J. Henkel, Jr.*

Parts and materials application review for project management of space systems engineering.

NASA SP-6505
N68-10120 58 pp
Avail NTIS 1967

An Introduction to the Assurance of Human Performance in Space Systems

Human factors engineering techniques for reducing human errors in space systems development.

NASA SP-6506
N68-20357 42 pp
Avail NTIS 1968

Parts, Materials, and Processes Experience Summary

Volume I

NASA SP-6507
N74-20070 337 pp
Avail NTIS 1973

Volume II

NASA SP-6507
N74-14140 381 pp
Avail NTIS 1973

Failure Analysis of Electronic Parts: Laboratory Methods

R. J. Anstead, E. Goldberg

NASA SP-6508
N75-23853 79 pp
Avail NTIS 1975

Techniques of Final Preseal Visual Inspection

R. J. Anstead

NASA SP-6509
N75-25205 63 pp
Avail NTIS 1975

Bibliographies

Contract Number Index to Reports Announced in STAR

Contract number index of scientific and technical aerospace reports—information retrieval.

NASA SP-7001	
N64-17262	197 pp
Avail NTIS	1964

High Energy Propellants: A Continuing Bibliography

Published annually from 1964 to 1967.

NASA SP-7002	
Avail NTIS	

Lunar Surface Studies: A Continuing Bibliography

Published annually from 1964 to 1968.

NASA SP-7003	
Avail NTIS	

Communications Satellites: A Continuing Bibliography

Published annually from 1964 to 1968.

NASA SP-7004	
Avail NTIS	

A Selected Listing of NASA Scientific and Technical Reports for 1963

NASA SP-7005	
N64-19889	245 pp
Avail NTIS	1964

Bibliographies on Aerospace Science: A Continuing Bibliography

Published in 1964, 1965, 1966, 1968.

NASA SP-7006	
Avail NTIS	

Preparing Contractor Reports for NASA: Repro Typing and Layout

NASA SP-7007	
N64-28073	19 pp
Avail GPO	1963

Preparing Contractor Reports for NASA: Technical Illustrating

Technical illustrating: graphs, line drawings, perspective drawing, photographs, typography, and layout.

NASA SP-7008	
N64-26749	27 pp
Avail GPO	1964

Lasers and Masers: A Continuing Bibliography

Published annually from 1965 to 1968.

NASA SP-7009	
N65-25599	283 pp
Avail NTIS	1965

Clarity in Technical Reporting

S. Katzoff

Mechanisms for writing abstracts and technical reports.

NASA SP-7010	
N64-26421	30 pp
Avail GPO	1964

Aerospace Medicine and Biology: A Continuing Bibliography

Published monthly.*

NASA SP-7011	
Avail NTIS	

The International System of Units: Physical Constants and Conversion Factors

E. A. Mechtly

Tables of conversion factors and physical constants in International System of Units.

NASA SP-7012	
N73-26969	23 pp
Avail GPO	1973

NASA Publications Manual, 1974

NASA SP-7013	
N75-13676	57 pp
Avail GPO	1974

Bibliography Related to Human Factors System Program, July 1962-February 1964

R. J. Potocko

NASA SP-7014	
N64-28317	242 pp
Avail NTIS	1964

Extraterrestrial Life: A Bibliography

Part I. Report Literature

NASA SP-7015	
N65-16598	80 pp
Avail NTIS	1964

Part II. Published Literature

NASA SP-7015	
N66-16566	345 pp
Avail NTIS	1965

* Available through NTIS subscription service.

Guide to the Subject Indexes for Scientific and Technical Aerospace Reports

Guide to subject indexes for aerospace scientific and technological information processing and retrieval.

NASA SP-7016
N66-35686
Avail NTIS

471 pp
1966

Planetary Atmospheres: A Continuing Bibliography

Published in 1965, 1966, and 1968.

NASA SP-7017
Avail NTIS

A Selected Listing of NASA Scientific and Technical Reports for 1964

NASA SP-7018
N65-20163
Avail GPO

1137 pp
1965

Contract Number Index to Reports Announced in CSTAR, Volume 2, 1964

Part 1

NASA SP-7019
N65-17535
Avail NTIS

156 pp
1965

Part 2

NASA SP-7019
N65-12088
Avail NTIS

80 pp
1964

Lubrication, Corrosion, and Wear: A Continuing Bibliography

Published in 1965, 1966, and 1968.

NASA SP-7020
Avail NTIS

Ballistocardiography: A Bibliography

NASA SP-7021
N65-35520
Avail NTIS

49 pp
1965

Space Communications: Theory and Applications: A Bibliography

L. C. Bickford, R. F. Filipowsky

Volume 1. Modulation and Channels

NASA SP-7022(01)
N65-27821
Avail GPO

486 pp
1965

Volume 2. Coding and Detection Theory

NASA SP-7022(02)
N65-29846
Avail NTIS

426 pp
1965

Volume 3. Information Processing and Advanced Techniques

NASA SP-7022(03)
N65-31136
Avail NTIS

463 pp
1965

Space Communications: Theory and Applications: A Bibliography (cont.)

Volume 4. Satellite and Deep Space Applications

NASA SP-7022(04)
N65-32187
Avail NTIS

303 pp
1965

An Annotated Bibliography of Computer-Aided Circuit Analysis and Design

C. W. Meissner, Jr.

NASA SP-7023
N68-19882
Avail NTIS

44 pp
1968

A Selected Listing of NASA Scientific and Technical Reports for 1965

Annotated bibliography on NASA scientific and technical reports for 1965 with corporate source, subject, and author indexes.

NASA SP-7024
N66-26846
Avail NTIS

1402 pp
1966

Preparing Contractor Reports for NASA: Data Presentation

P. P. Taylor, Jr.

Guidelines for presentation of graphical and tabular data.

NASA SP-7025
N66-38488
Avail NTIS

32 pp
1966

Particles and Fields Research: A Bibliography

W. N. Hess, G. D. Mead

Rocket and satellite research bibliography on magnetic and electric fields, and cosmic energetic particles.

NASA SP-7026
N66-30156
Avail NTIS

173 pp
1966

Secondary Aerospace Batteries and Battery Materials: A Bibliography

G. Halpert, W. H. Webster, Jr.

Annotated bibliography on secondary aerospace battery materials and related processes from 1923 through 1968.

NASA SP-7027
N70-22825
Avail NTIS

154 pp
1969

A Selected Listing of NASA Scientific and Technical Reports for 1966

NASA SP-7028
N67-29260
Avail GPO

20/8 pp
1967

**NASA Scientific and Technical Reports
for 1967: A Selected Listing**

NASA SP-7029
N68-29039 424 pp
Avail NTIS 1968

NASA Thesaurus

Subject terms for indexing scientific and technical information.

Volume I. Alphabetical Listing, A-L

NASA SP-7030
N68-11307 441 pp
Avail NTIS 1967

Volume II. Alphabetical Listing, M-Z

NASA SP-7030
N68-11308 428 pp
Avail NTIS 1967

Volume III. Appendixes

NASA SP-7030
N68-11309 651 pp
Avail NTIS 1967

**Properties of Selected Radioisotopes.
Volume I: Unclassified Literature**

J. Epstein, D. Harris

Annotated bibliography of nuclear, chemical, and physical properties of nine radioactive isotopes.

NASA SP-7031
N68-29959 189 pp
Avail NTIS 1968

**Properties of Selected Radioisotopes.
Volume II: Classified Literature**

J. Epstein, D. Harris

NASA SP-7032 46 pp
X69-50006 1968

**NASA Scientific and Technical Reports
for 1968: A Selected Listing**

NASA SP-7033
N69-29492 453 pp
Avail NTIS 1969

**R and D Reporting: Guidance for
Technical Monitors of NASA Contracts**

Options and information resources open to NASA monitors.

NASA SP-7034
N70-14397 16 pp
Avail NTIS 1969

**NASA Scientific and Technical Reports
and Publications for 1969: A Selected
Listing**

Bibliographic citations and abstracts of NASA scientific and technical reports with indexes.

NASA SP-7035
N70-34702 950 pp
Avail GPO 1970

**Remote Sensing of Earth Resources:
A Literature Survey With Indexes**

Annotated bibliography of literature on remote sensing of Earth resources announced between January/February 1962 and 1970.

NASA SP-7036
N70-41047 1220 pp
Avail NTIS 1970

**Remote Sensing of Earth Resources
(Supplement)**

Section 1. Abstracts
NASA SP-7036(01)
N75-25235 654 pp
Avail NTIS 1975

Section 2. Indexes
NASA SP-7036(01)
N75-25236 402 pp
Avail NTIS 1975

**Aeronautical Engineering: A Special
Bibliography**

Published monthly.
NASA SP-7037
Avail NTIS

**Significant NASA Inventions Available
for Licensing in Foreign Countries**

Published in 1971, 1973, 1974, 1975, 1976, 1977.

NASA SP-7038
Avail GPO

**NASA Patent Abstracts Bibliography:
A Continuing Bibliography**

Published semiannually.
NASA SP-7039
Avail NTIS

NASA Thesaurus Alphabetical Update

Thesaurus of postable and nonpostable subject terms currently approved for use in NASA scientific and technical information system.

NASA SP-7040
N72-15923 619 pp
Avail NTIS 1971

* Available through NTIS subscription service.

Earth Resources: A Continuing Bibliography

Published quarterly.*

NASA SP-7041

Avail NTIS

Energy: A Special Bibliography With Indexes

NASA SP-7042

N74-29337

Avail NTIS

534 pp

1974

Energy: A Continuing Bibliography With Indexes

Published quarterly.*

NASA SP-7043

Avail NTIS

Secondary Aerospace Batteries and Battery Materials: A Bibliography (1969-1974)

*P. McDermott, G. Halpert,
S. Ekpanyaskun, et al.*

NASA SP-7044

N77-16437

Avail NTIS

161 pp

1976

Technology for Large Space Systems: A Continuing Bibliography

NASA SP-7046

N79-20146

Avail NTIS

164 pp

1979

NASA Thesaurus

Volume I. Alphabetical Listing

NASA SP-7050

N76-17992

Avail NTIS

820 pp

1976

Volume II. Access Vocabulary

NASA SP-7050

N76-17993

Avail NTIS

442 pp

1976

NASA Guidelines on Report Literature

NASA seeks for inclusion in its Scientific and Technical Information System research reports, conference proceedings, meeting papers, monographs, and doctoral and post-graduate theses which relate to the NASA mission and objectives. Topics of interest to NASA are presented.

NASA SP-7200

N79-13914

Avail NTIS

27 pp

1978

Management: A Continuing Literature Survey With Indexes

Published annually.*

NASA SP-7500

Avail NTIS

The Systems Approach to Management. An Annotated Bibliography With Indexes

NASA SP-7501

N69-34917

Avail NTIS

69 pp

1969

OGO Program Summary: The Orbiting Geophysical Observatories

J. E. Jackson, J. I. Vette

NASA SP-7601

N76-19643

Avail NTIS

307 pp

1975

* Available through NTIS subscription service.

Space Vehicle Design Criteria

Buffeting During Atmospheric Ascent

Aeroelastic spacecraft design to minimize buffeting during atmospheric ascent.

NASA SP-8001

N71-20473

Avail NTIS

19 pp
1970

Flight-Loads Measurements During Launch and Exit

NASA SP-8002

N66-85660

Avail NTIS

7 pp
1964

Flutter, Buzz, and Divergence

NASA SP-8003

N70-71604

Avail NTIS

10 pp
1964

Panel Flutter

Criteria for predicting, preventing, and evaluating panel flutter.

NASA SP-8004

N73-11932

Avail NTIS

52 pp
1972

Solar Electromagnetic Radiation

Values for solar constant and solar spectral irradiance based on air and spaceborne observations for use in design of spacecraft, space vehicles, subsystems, and experiments.

NASA SP-8005

N71-30888

Avail NTIS

36 pp
1971

Local Steady Aerodynamic Loads During Launch and Exit

NASA SP-8006

N70-71605

Avail NTIS

12 pp
1965

Buckling of Thin-Walled Circular Cylinders

Predicting buckling of thin-walled, uniform stiffened and unstiffened circular cylindrical shells under static loading.

NASA SP-8007

N69-23320

Avail NTIS

58 pp
1968

Prelaunch Ground Wind Loads

NASA SP-8008

N70-71628

Avail NTIS

16 pp
1965

Propellant Slosh Loads

NASA SP-8009

N69-14553

Avail NTIS

188 pp

1968

Models of Mars Atmosphere (1974)

NASA SP-8010

N75-19107

Avail NTIS

52 pp

1974

Models of Venus Atmosphere (1972)

Engineering models of Venus atmosphere, based on theory and measured data.

NASA SP-8011

N73-16824

Avail NTIS

63 pp

1972

Natural Vibration Model Analysis

J. S. Archer

Natural vibration model analysis as related to space vehicle design criteria.

NASA SP-8012

N69-22773

Avail NTIS

35 pp

1968

Meteoroid Environment Model—1969 (Near Earth to Lunar Surface)

Meteoroid environment model for cometary origin near Earth to lunar surface.

NASA SP-8013

N69-40326

Avail NTIS

35 pp

1969

Entry Thermal Protection

NASA SP-8014

N69-71545

Avail NTIS

37 pp

1968

Guidance and Navigation for Entry Vehicles

Guidance and navigation for atmospheric entry phase of vehicles.

NASA SP-8015

N69-19518

Avail NTIS

47 pp

1968

Effects of Structural Flexibility on Spacecraft Control Systems

Design and test criteria regarding structural flexibility effects on spacecraft stability and control systems.

NASA SP-8016

N69-37030

Avail NTIS

70 pp

1969

Magnetic Fields—Earth and Extraterrestrial	Solid Rocket Motor Metal Cases
Strength and direction data on Earth and extraterrestrial magnetic fields for guidance in vehicle design.	Guidelines and practices for design of solid rocket motor cases.
NASA SP-8017	NASA SP-8025
N69-40269	N70-29740
Avail NTIS	Avail NTIS
70 pp	103 pp
1969	1970
Spacecraft Magnetic Torques	Spacecraft Star Trackers
Magnetic torque resulting from interaction between magnetic properties of spacecraft and ambient magnetic field.	Design criteria for spacecraft star trackers.
NASA SP-8018	NASA SP-8026
N69-30339	N70-38721
Avail NTIS	Avail NTIS
55 pp	69 pp
1969	1970
Buckling of Thin-Walled Truncated Cones	Spacecraft Radiation Torques
Buckling of thin-walled truncated conical shells under static loads.	Radiation torque sources and effects on space-craft and spacecraft attitude control system design.
NASA SP-8019	NASA SP-8027
N69-24131	N71-24312
Avail NTIS	Avail NTIS
32 pp	41 pp
1968	1969
Surface Models of Mars (1975)	Entry Vehicle Control
NASA SP-8020	Stabilization and control systems for reentry vehicles.
N75-32989	NASA SP-8028
Avail NTIS	N70-28538
84 pp	Avail NTIS
1975	51 pp
Models of Earth's Atmosphere (90 to 2500 km)	NASA SP-8029
Model for predicting atmospheric parameters at altitudes between 90 and 2500 km.	N70-18828
NASA SP-8021	Avail NTIS
N73-27325	53 pp
Avail NTIS	1969
63 pp	
1973	
Staging Loads	Aerodynamic and Rocket-Exhaust Heating During Launch and Ascent
Analysis of loads produced on spacecraft by staging operations and practices to ensure that staging loads are included in spacecraft design.	NASA SP-8029
NASA SP-8022	N70-18828
N71-28634	Avail NTIS
30 pp	53 pp
Avail NTIS	1969
1969	1969
Lunar Surface Models	Transient Loads From Thrust Excitation
Engineering models of lunar topography including dielectric, optical, terrain, and crater models.	Analysis of transient loads produced by ignition of rocket engine during launch and flight operations for solid and liquid propellant rocket engines.
NASA SP-8023	NASA SP-8030
N70-18901	N71-24281
Avail NTIS	Avail NTIS
60 pp	28 pp
1969	1969
Spacecraft Gravitational Torques	Slosh Suppression
Gravitational torque effects and analysis for satellite design.	Slosh suppression devices for aerospace vehicle control stability.
NASA SP-8024	NASA SP-8031
N70-23418	N70-21848
Avail NTIS	Avail NTIS
51 pp	36 pp
1969	1969

Spacecraft Earth Horizon Sensors	Captive-Fired Testing of Solid Rocket Motors
Engineering design of spacecraft Earth horizon sensors.	Captive-fired testing of solid rocket motors for design criteria.
NASA SP-8033	NASA SP-8041
N70-35570	N71-30866
Avail NTIS	101 pp 1971
49 pp 1969	
Spacecraft Mass Expulsion Torques	Meteoroid Damage Assessment
Spacecraft design considerations associated with disturbance torques caused by mass expulsion.	Meteoroid damage determination and space-craft structure protection and reliability.
NASA SP-8034	NASA SP-8042
N70-36852	N71-25070
Avail NTIS	50 pp 1970
39 pp 1969	
Wind Loads During Ascent	Design-Development Testing
Determining wind induced structural loads on space vehicles during ascent.	Criteria and procedures for testing spacecraft structural elements and components.
NASA SP-8035	NASA SP-8043
N70-36953	N71-25069
Avail NTIS	35 pp 1970
36 pp 1970	
Effects of Structural Flexibility on Launch Vehicle Control Systems	Qualification Testing
Structural flexibility effects on launch vehicle control systems and design criteria.	Qualification tests conducted on flight quality components, subsystems, and systems to prove that structural design requirements have been achieved.
NASA SP-8036	NASA SP-8044
N70-39774	N71-29045
Avail NTIS	30 pp 1970
51 pp 1970	
Assessment and Control of Spacecraft Magnetic Fields	Acceptance Testing
NASA SP-8037	Standardization of structural acceptance tests conducted on flight hardware.
N71-13078	NASA SP-8045
Avail NTIS	N71-31033
30 pp 1970	34 pp 1970
	Avail NTIS
Meteoroid Environment Model—1970 (Interplanetary and Planetary)	Landing Impact Attenuation for Non-Surface-Planing Landers
Astronomical meteoroid environment model for space missions.	NASA SP-8046
NASA SP-8038	N70-38294
N71-17525	47 pp 1970
Avail NTIS	Avail NTIS
69 pp 1970	
Solid Rocket Motor Performance Analysis and Prediction	Spacecraft Sun Sensors
Current design practices and technology for predicting propulsion performance of solid propellant rocket engine designs.	Design criteria and performance specifications for spacecraft Sun sensors.
NASA SP-8039	NASA SP-8047
N72-18785	N71-17756
Avail NTIS	42 pp 1970
113 pp 1971	Avail NTIS
Fracture Control of Metallic Pressure Vessels	Liquid Rocket Engine Turbopump Bearings
Design criteria for fracture optimization of metallic pressure vessels.	Bearing requirements for liquid rocket engine turbopumps.
NASA SP-8040	NASA SP-8048
N71-14130	N71-28011
Avail NTIS	85 pp 1971
65 pp 1970	Avail NTIS

The Earth's Ionosphere

Space vehicle design with considerations for ionospheric electron and ionic density, plasma temperature of ionosphere, and neutral component.

NASA SP-8049
N71-30849
Avail NTIS

49 pp
1971

Structural Vibration Prediction

Internal loads and stresses caused by space vehicle vibration resulting from induced or natural environments.

NASA SP-8050
N71-19281
Avail NTIS

41 pp
1970

Solid Rocket Motor Igniters

Design approach for solid propellant rocket igniters.

NASA SP-8051
N71-30346
Avail NTIS

111 pp
1971

Liquid Rocket Engine Turbopump Inducers

Design criteria for liquid rocket engine turbopump inducers.

NASA SP-8052
N71-34950
Avail NTIS

255 pp
1971

Nuclear and Space Radiation Effects on Materials

Effects of nuclear and space radiation on mechanical, thermal, and optical properties of spacecraft structural materials.

NASA SP-8053
N71-25034
Avail NTIS

48 pp
1970

Space Radiation Protection

Criteria and procedures for determining dosage of penetrating space radiation and design of appropriate protection for space vehicles.

NASA SP-8054
N71-25075
Avail NTIS

50 pp
1970

Prevention of Coupled Structure-Propulsion Instability (Pogo)

NASA SP-8055
N71-26080
Avail NTIS

51 pp
1970

Flight Separation Mechanisms

Criteria and recommended practices for designing and testing flight separation mechanisms.

NASA SP-8056
N71-28986
Avail NTIS

39 pp
1970

Structural Design Criteria Applicable to A Space Shuttle

Updated structural design criteria for manned space shuttle missions.

NASA SP-8057
N73-17881
Avail NTIS

99 pp
1972

Spacecraft Aerodynamic Torques

Assessment of disturbance torques due to interaction of spacecraft with atmosphere in long duration orbits for use in design of spacecraft attitude control systems.

NASA SP-8058
N71-25935
Avail NTIS

37 pp
1971

Spacecraft Attitude Control During Thrusting Maneuvers

NASA SP-8059
N71-26198
Avail NTIS

51 pp
1971

Compartment Venting

Analysis of internal and external gas venting system of spacecraft.

NASA SP-8060
N71-28166
Avail NTIS

31 pp
1970

Interactions With Umbilicals and Launch Stand

Criteria and recommendations to ensure compatible interfaces between space vehicle structure and launch stand ground support equipment.

NASA SP-8061
N71-28829
Avail NTIS

23 pp
1970

Entry Gasdynamic Heating

Determining heat transfer to space vehicles entering planetary atmospheres for proper design and thermal protection.

NASA SP-8062
N71-31179
Avail NTIS

60 pp
1971

Lubrication, Friction, and Wear

Lubrication, friction, and wear processes analyzed for space vehicle design criteria.

NASA SP-8063
N71-31471
Avail NTIS

180 pp
1971

Solid Propellant Selection and Characterization

Analysis of properties of solid rocket propellants and parameters which affect choice of propellant for specific applications.

NASA SP-8064
N72-15737
Avail NTIS

116 pp
1971

Tubular Spacecraft Booms (Extendible, Reel Stored)

Development of reliable and operational design programs for spacecraft guidance and control.

NASA SP-8065
N71-33330
Avail NTIS

52 pp
1971

Deployable Aerodynamic Deceleration Systems

Criteria and recommended practices for design, selection, analysis, and testing of deployable aerodynamic deceleration systems.

NASA SP-8066
N71-31303
Avail NTIS

88 pp
1971

Earth Albedo and Emitted Radiation

Global annual averages of Earth albedo and radiation used to estimate long term effects on space vehicle equipment and surfaces

NASA SP-8067
N71-33104
Avail NTIS

48 pp
1971

Buckling Strength of Structural Plates

Designs for determining buckling strength of structural plates for spacecraft.

NASA SP-8068
N71-33331
Avail NTIS

50 pp
1971

The Planet Jupiter (1970)

Visible, infrared, and radio observations of Jupiter using Earth based and airborne equipment

NASA SP-8069
N72-17309
Avail NTIS

98 pp
1971

Spaceborne Digital Computer Systems

Design criteria for guidance and control spaceborne computer selection including physical and functional characteristics and reliability.

NASA SP-8070
N71-33679
Avail NTIS

82 pp
1971

Passive Gravity-Gradient Libration Dampers

NASA SP-8071
N71-34590
Avail NTIS

60 pp
1971

Acoustic Loads Generated by the Propulsion System

Design of flightworthy space vehicle.

NASA SP-8072
N71-33195
Avail NTIS

54 pp
1971

Solid Propellant Grain Structural Integrity Analysis

NASA SP-8073
N74-19389
Avail NTIS

114 pp
1973

Spacecraft Solar Cell Arrays

NASA SP-8074
N71-37630
Avail NTIS

54 pp
1971

Solid Propellant Processing Factors in Rocket Motor Design

NASA SP-8075
N72-31267
Avail NTIS

82 pp
1971

Solid Propellant Grain Design and Internal Ballistics

NASA SP-8076
N73-15804
Avail NTIS

110 pp
1972

Transportation and Handling Loads

Criteria and recommended practices for predicting and verifying transportation and handling loads for space vehicle structure or major segments.

NASA SP-8077
N72-12891
Avail NTIS

48 pp
1971

Spaceborne Electronic Imaging Systems
Criteria and recommended practices for designing spaceborne elements of electronic imaging systems.

NASA SP-8078
N72-14169
Avail NTIS

71 pp
1971

Structural Interaction With Control Systems

Predictions of structural interrelationships with spacecraft active and passive control systems to determine optimum design.

NASA SP-8079
N72-17920
Avail NTIS

56 pp
1971

Liquid Rocket Pressure Regulators, Relief Valves, Check Valves, Burst Discs, and Explosive Valves

NASA SP-8080
N74-10724
Avail NTIS

123 pp
1973

Liquid Propellant Gas Generators

Design of gas turbine for furnishing hot gases for turbine drives and analysis of limitations imposed by thermal stresses.

NASA SP-8081
N76-30284
Avail NTIS

110 pp
1972

Stress-Corrosion Cracking in Metals

Criteria and recommended practices for preventing stress-corrosion cracking in spacecraft structures.

NASA SP-8082
N72-17928
Avail NTIS

42 pp
1971

Discontinuity Stresses in Metallic Pressure Vessels

NASA SP-8083
N72-26933
Avail NTIS

69 pp
1971

Surface Atmospheric Extremes (Launch and Transportation Areas)

Effects of atmospheric surface parameters on space vehicle design and operation.

NASA SP-8084
N74-30047
Avail NTIS

77 pp
1974

The Planet Mercury (1971)

Physical properties of Mercury, including atmosphere and surface, for space vehicle design criteria.

NASA SP-8085
N72-20799
Avail NTIS

65 pp
1972

Space Vehicle Displays Design Criteria
Design and evaluation of spacecraft display guidance and control systems.

NASA SP-8086
N72-26337
Avail NTIS

45 pp
1972

Liquid Rocket Engine Fluid-Cooled Combustion Chambers

Monograph for design and development of combustion chambers for liquid propellant rocket engines.

NASA SP-8087
N73-31697
Avail NTIS

120 pp
1972

Liquid Rocket Metal Tanks and Tank Components

NASA SP-8088
N75-13022
Avail NTIS

165 pp
1974

Liquid Rocket Engine Injectors

NASA SP-8089
N76-30284
Avail NTIS

150 pp
1976

Liquid Rocket Actuators and Operators

NASA SP-8090
N74-17785
Avail NTIS

158 pp
1973

The Planet Saturn (1970)

Saturn planet and environment data for spacecraft designers.

NASA SP-8091
N72-29840
Avail NTIS

103 pp
1972

Assessment and Control of Spacecraft Electromagnetic Interference

Design criteria relating to assessment and control of spacecraft electromagnetic interference.

NASA SP-8092
N72-26119
Avail NTIS

57 pp
1972

Solid Rocket Motor Internal Insulation

NASA SP-8093
N77-30171
Avail NTIS

124 pp
1976

Liquid Rocket Engine Valve Components

NASA SP-8094
N74-27276
Avail NTIS

150 pp
1973

Preliminary Criteria for the Fracture Control of Space Shuttle Structures	Structural Interaction With Transportation and Handling Systems
NASA SP-8095 N72-25851 Avail NTIS	16 pp 1971
Space Vehicle Gyroscope Sensor Application	Space vehicle design to withstand adverse conditions involved in handling and transportation from factory to launch site.
NASA SP-8096 N73-12680 Avail NTIS	87 pp 1972
Liquid Rocket Valve Assemblies	Spacecraft Thermal Environment
NASA SP-8097 N74-26979 Avail NTIS	154 pp 1973
Effects of Structural Flexibility on Entry Vehicle Control Systems	Guidance for assessment and control of spacecraft temperatures.
NASA SP-8098 N72-29870 Avail NTIS	68 pp 1972
Combining Ascent Loads	NASA SP-8105
Criteria and guidelines for combining loads during ascent phase of space flight.	N73-26890 Avail NTIS
NASA SP-8099 N73-11897 Avail NTIS	36 pp 1972
Liquid Rocket Engine Turbopump Gears	Turbopump Systems for Liquid Rocket Engines
NASA SP-8100 N75-10166 Avail NTIS	NASA SP-8107 N75-20470 Avail NTIS
Liquid Rocket Engine Turbopump Shafts and Couplings	Advanced Composite Structures
NASA SP-8101 N74-14441 Avail NTIS	NASA SP-8108 N76-12115 Avail NTIS
Space Vehicle Accelerometer Applications	Liquid Rocket Engine Centrifugal Flow Turbopumps
NASA SP-8102 N75-26891 Avail NTIS	NASA SP-8109 N74-28961 Avail NTIS
The Planets Uranus, Neptune, and Pluto (1971)	Liquid Rocket Engine Turbines
Influence of Uranus, Neptune, and Pluto environment on design of spacecraft probes	NASA SP-8110 N74-34245 Avail NTIS
NASA SP-8103 N75-11870 Avail NTIS	Assessment and Control of Electrostatic Charges
99 pp 1972	NASA SP-8111 N74-27534 Avail NTIS
Solid Rocket Thrust Vector Control	Pressurization Systems for Liquid Rockets
NASA SP-8114 N76-17194 Avail NTIS	NASA SP-8112 N76-22300 Avail NTIS
Liquid Rocket Engine Combustion Stabilization Devices	Liquid Rocket Engine Combustion Stabilization Devices
NASA SP-8113 N75-28247 Avail NTIS	NASA SP-8113 N75-28247 Avail NTIS
127 pp 1974	127 pp 1974
Space Vehicle Gyroscope Sensor Application	Structural Interaction With Transportation and Handling Systems
NASA SP-8096 N73-12680 Avail NTIS	16 pp 1971
Liquid Rocket Valve Assemblies	Space vehicle design to withstand adverse conditions involved in handling and transportation from factory to launch site.
NASA SP-8097 N74-26979 Avail NTIS	NASA SP-8104 N73-21839 Avail NTIS
Effects of Structural Flexibility on Entry Vehicle Control Systems	Spacecraft Thermal Environment
NASA SP-8098 N72-29870 Avail NTIS	Guidance for assessment and control of spacecraft temperatures.
NASA SP-8099 N73-11897 Avail NTIS	NASA SP-8105 N73-26890 Avail NTIS
Combining Ascent Loads	Turbopump Systems for Liquid Rocket Engines
Criteria and guidelines for combining loads during ascent phase of space flight.	NASA SP-8107 N75-20470 Avail NTIS
NASA SP-8099 N73-11897 Avail NTIS	Advanced Composite Structures
68 pp 1972	NASA SP-8108 N76-12115 Avail NTIS
Liquid Rocket Engine Turbopump Shafts and Couplings	Liquid Rocket Engine Centrifugal Flow Turbopumps
NASA SP-8101 N74-14441 Avail NTIS	NASA SP-8109 N74-28961 Avail NTIS
Space Vehicle Accelerometer Applications	Liquid Rocket Engine Turbines
NASA SP-8102 N75-26891 Avail NTIS	NASA SP-8110 N74-34245 Avail NTIS
The Planets Uranus, Neptune, and Pluto (1971)	Assessment and Control of Electrostatic Charges
Influence of Uranus, Neptune, and Pluto environment on design of spacecraft probes	NASA SP-8111 N74-27534 Avail NTIS
NASA SP-8103 N75-11870 Avail NTIS	Pressurization Systems for Liquid Rockets
99 pp 1972	NASA SP-8112 N76-22300 Avail NTIS
Solid Rocket Thrust Vector Control	Liquid Rocket Engine Combustion Stabilization Devices
NASA SP-8114 N76-17194 Avail NTIS	NASA SP-8113 N75-28247 Avail NTIS
200 pp 1974	127 pp 1974

Solid Rocket Motor Nozzles	Liquid Rocket Engine Turbopump Rotating-Shaft Seals
NASA SP-8115	NASA SP-8121
N76-20214	N78-30584
Avail NTIS	1975
140 pp	160 pp
The Earth's Trapped Radiation Belts	The Environment of Titan (1975)
NASA SP-8116	NASA SP-8122
N75-22980	N7628138
Avail NTIS	1975
100 pp	45 pp
Gravity Fields of the Solar System	Avail NTIS
NASA SP-8117	1976
N75-24608	
Avail NTIS	
79 pp	
Interplanetary Charged Particle Models (1974)	Liquid Rocket Lines, Bellows, Flexible Hoses, and Filters
NASA SP-8118	NASA SP-8123
N75-24607	N78-16089
Avail NTIS	1975
47 pp	186 pp
Liquid Rocket Disconnects, Couplings, Fittings, Fixed Joints, and Seals	Avail NTIS
State of the art and design criteria for components used in liquid propellant rocket propulsion systems to contain and control the flow of fluids.	1977
NASA SP-8119	Liquid Rocket Engine Self-Cooled Combustion Chambers
N77-24191	NASA SP-8124
Avail NTIS	N78-21211
164 pp	1977
1976	130 pp
Liquid Rocket Engine Nozzles	Avail NTIS
NASA SP-8120	
N77-16108	
Avail NTIS	
120 pp	
1976	Liquid Rocket Engine Axial Flow Turbopumps
	NASA SP-8125
	N78-31164
	Avail NTIS
	127 pp
	1978
	Glossary of Terms and Table of Conversion Factors Used in Design of Chemical Propulsion Systems
	NASA SP-8126
	N80-17136
	Avail NTIS
	89 pp
	1979

Specifications

NASA Specifications and Standards

NASA SP-9000
N67-34727
Avail NTIS

388 pp
1967

A Guide to NASA Data Handbooks

Handbooks, manuals, procedures, instructions, and related technical data publications in NASA CENTRAL Information System.

NASA SP-9001
N67-18003
Avail NTIS

190 pp
1967

Reference Publications

Overall Loudness of Steady Sounds According to Theory and Experiment

W. L. Howes

A mathematical theory for calculating the loudness of any steady sound from information on its spectrum constructed from physical principles and psychological and physiological information on mammalian auditory systems.

NASA RP-1001
N79-25753 150 pp
Avail GPO 1979

Cryogenic Foam Insulation: Abstracted Publications

F. R. Williamson

The properties of foam materials and the use of foams as thermal insulation at cryogenic temperatures.

NASA RP-1002
N78-11200 171 pp
Avail NTIS 1977

Bibliography of Supersonic Cruise Aircraft Research (SCAR)

S. Hoffman

Propulsion, stratospheric emissions impact, structures and materials, aerodynamic performance, stability and control.

NASA RP-1003
N78-12895 102 pp
Avail NTIS 1977

Fronts and Frontogenesis as Revealed by High Time Resolution Data

A. E. Frank, D. A. Barber

Upper air sounding used to examine a cold front of average intensity.

NASA RP-1005
N77-30705 135 pp
Avail NTIS 1977

Correction Factors for On-Line Microprobe Analysis of Multielement Alloy Systems

J. Unnam, D. R. Tenney, W. D. Brewer

An on-line correction technique developed for the conversion of electron probe x-ray intensities into concentrations of emitting elements.

NASA RP-1006
N78-15236 216 pp
Avail NTIS 1977

Viking Lander Imaging Investigation: Picture Catalog of Primary Mission Experiment Data Record

R. B. Tucker

Images returned by the two Viking Landers during the primary phase of the Viking Mission.

NASA RP-1007
N78-20042 514 pp
Avail NTIS 1978

Lightning Protection of Aircraft

F. A. Fisher, J. A. Plumer

Potential lightning effects on aircraft and the means available to designers and operators to protect against the effects.

NASA RP-1008
N78-11024 530 pp
Avail NTIS 1977

An Introduction to Orbit Dynamics and Its Application to Satellite-Based Earth Monitoring Systems

D. R. Brooks

The long-term behavior of satellites studied at a level of complexity suitable for the initial planning phases of Earth monitoring missions.

NASA RP-1009
N78-12113 85 pp
Avail NTIS 1977

Chlorofluoromethanes and the Stratosphere

R. D. Hudson

Laboratory measurements, ozone measurements and trends, minor species and aerosol measurements, one-dimensional modeling, multidimensional modeling.

NASA RP-1010
N77-31694 268 pp
Avail NTIS 1977

Thermodynamic and Related Properties of Oxygen From the Triple Point to 300 K at Pressures to 1000 Bar

L. A. Weber

The results of an experimental program presented in the form of PVT data in the temperature range 58 to 300 K at pressures up to 800 bar. Tables of the derived thermodynamic properties on isobars to 1000 bar are given.

NASA RP-1011
N78-16119 164 pp
Avail NTIS 1977

**Remote Sensing of Oceanic Parameters
During the Skylab/Gamefish Experiment**

K. H. Faller

Effort to demonstrate the feasibility of using remotely acquired information to assess and monitor the distribution of oceanic gamefish.

NASA RP-1012

N78-12644

Avail NTIS

43 pp

1977

Triple Point Determinations of Mono-methylhydrazine and Nitrogen Tetroxide, 2.2 Percent by Weight Nitric Oxide

I. D. Smith, P. M. Dodge

Tests performed to ascertain the triple points of monomethylhydrazine and nitrogen tetroxide. New experimental values for liquid monomethylhydrazine vapor pressure for temperatures from 275.2 to 207.6 K. Tentative values for the effective freezing point of nitrogen tetroxide in spacelike conditions.

NASA RP-1013

N78-13234

Avail NTIS

16 pp

1977

An Outgassing Data Compilation of Spacecraft Materials

*W. A. Campbell, Jr., R. S. Marriott,
J. J. Park*

Outgassing data derived from tests at 398 K (125°C) or 24 hours in vacuum for numerous materials for spacecraft use.

NASA RP-1014

N78-17151

Avail NTIS

181 pp

1978

Procedures for Gathering Ground Truth Information for a Supervised Approach to a Computer-Implemented Land Cover Classification of Landsat-Acquired Multispectral Scanner Data

A. T. Joyce

NASA RP-1015

N78-15549

Avail NTIS

48 pp

1978

The Use of Landsat Digital Data and Computer-Implemented Techniques for an Agricultural Application

A. T. Joyce, R. H. Griffin II

Agricultural applications procedures for use of Landsat digital data and other digitalized data.

NASA RP-1016

N78-21568

Avail NTIS

48 pp

1978

Stratospheric Warmings: Synoptic, Dynamic and General-Circulation Aspects

R. M. McInturff

Distinction between major and minor warmings, the importance of tropospheric-stratospheric interaction, the significance of the pressure-work term near the tropopause.

NASA RP-1017

N78-18630

Avail NTIS

173 pp

1978

Guide to a Condensed Form of NASTRAN

J. L. Rogers, Jr.

Limited capability form of NASTRAN level 16 to meet the needs of universities and small consulting firms. Can serve as a handbook for instructional courses in the use of NASTRAN or for users who need only the capability provided by the condensed form.

NASA RP-1019

N78-33791

Avail NTIS

297 pp

1978

Precision Positional Data of General Aviation Air Traffic in Terminal Air Space

*W. E. Melson, Jr., L. C. Parker,
A. M. Northam, et al.*

Three-dimensional radar tracks of general aviation air traffic at three uncontrolled airports.

NASA RP-1020

N78-25048

Avail NTIS

13 pp

1978

A Bibliography on the Search for Extraterrestrial Intelligence

*E. F. Mallove, M. M. Connors,
R. L. Forward, et al.*

A uniform compilation of works dealing with the search for extraterrestrial intelligence.

NASA RP-1021

N78-21019

Avail NTIS

135 pp

1978

**Man's Impact on the Troposphere:
Lectures in Tropospheric Chemistry**
J. S. Levine, D. R. Schryer

Lectures covering a broad spectrum of current research in tropospheric chemistry, with particular emphasis on the interaction of measurements, modeling, and understanding of fundamental processes.

NASA RP-1022
N79-10634 371 pp
Avail NTIS 1978

**Synoptic Analyses, 5-, 2-, and
0.4-Millibar Surfaces for July 1974
Through June 1976**

Meteorological rocketsonde and satellite radiance data employed for analyses of a continuing series of high altitude constant pressure charts.

NASA RP-1023
N78-28748 330 pp
Avail NTIS 1978

Anthropometric Source Book

*E. Churchill, L. L. Laubach,
J. T. McConville, et al.*

Volume 1. Anthropometry for Designers. Application of anthropometry to design of clothing, equipment, and workspaces for manned space flight.

NASA RP-1024
N79-11734 603 pp
Avail NTIS 1978

Volume 2. A Handbook of Anthropometric Data. Data from surveys of 61 populations; 295 measured variables.

NASA RP-1024
N79-13711 428 pp
Avail NTIS 1978

Volume 3. Annotated Bibliography of Anthropometry

NASA RP-1024
N79-13712 130 pp
Avail NTIS 1978

Handbook on Astronaut Crew Motion Disturbances for Control System Design in Skylab

M. C. Kullas

The analyses and results pertinent to the characterization of the disturbances imparted to the Skylab vehicle by the T-013 crew motion experiments.

NASA RP-1025
N79-27237 196 pp
Avail NTIS 1979

An Assessment of the Effect of Supersonic Aircraft Operations on the Stratospheric Ozone Content

*I. G. Poppoff, R. C. Whitten,
R. P. Turco, et al.*

An assessment of the potential effect on stratospheric ozone of an advanced supersonic transport operation using the most recent chemical reaction rate data.

NASA RP-1026
N78-30774 60 pp
Avail NTIS 1978

A New Dimension. Wallops Island Flight Test Range: The First Fifteen Years

J. A. Shortal

A record of the first fifteen years (1945-1959) of research and development tests that were performed at Wallops Island.

NASA RP-1028
N79-20166 784 pp
Avail NTIS 1978

The PR2D (Place, Route in 2-Dimensions) Automatic Layout Computer Program Handbook

T. M. Edge

NASA RP-1029
N79-71512 256 pp
Avail NIAC 1978

Molecules of Significance in Planetary Aeronomy

H. Mohan

Spectroscopic information of the molecules of planetary interest. General conditions of planets and their atmospheres including the gaseous molecules.

NASA RP-1030
N79-22980 318 pp
Avail NTIS 1979

Catalog of Far-Ultraviolet Objective-Prism Spectrophotometry: Skylab Experiment S-019, Ultraviolet Stellar Astronomy

*K. G. Henize, J. D. Wray,
S. B. Parsons, et al.*

Approximately 1000 spectra representing 500 stars were measured and reduced to observed fluxes. Spectrophotometric results are tabulated for these 500 stars.

NASA RP-1031
N79-27057 545 pp
Avail NTIS 1979

**Synoptic Analyses, 5-, 2-, 1-, and
0.4-Millibar Surfaces for July 1976
Through June 1977**

Meteorological rocketsonde and satellite radiance data employed for analyses of a continuing series of high-altitude constant-pressure charts.

NASA RP-1032
N79-19569 226 pp
Avail NTIS 1978

**Convective Rainfall Estimation From
Digital GOES-1 Infrared Data**

G. L. Sickler, A. H. Thompson

An investigation to determine the feasibility of developing an objective technique for estimating convective rainfall from digital GOES-1 infrared data.

NASA RP-1034
N79-31885 96 pp
Avail NTIS 1979

**Survey and Bibliography on Attainment
of Laminar Flow Control in Air Using
Pressure Gradient and Suction**

D. M. Bushnell, M. H. Tuttle

The survey, summaries of data for both ground and flight experiments, and abstracts of referenced reports.

NASA RP-1035
N79-33438 346 pp
Avail NTIS 1979

ALSEP Termination Report

*J. R. Bates, W. W. Lauderdale,
H. Kernaghan*

Description of experiments and pertinent operational history, data processing and distribution, significant scientific findings.

NASA RP-1036
N79-22979 161 pp
Avail NTIS 1979

Collisionless Galaxy Simulations

F. Hobl, T. A. Zang, J. B. Miller

Computer experiments performed to determine the collapse and relaxation of initially spherical, uniform density and uniform velocity dispersion stellar systems.

NASA RP-1037
N79-24921 149 pp
Avail NTIS 1979

**Review and Status of Liquid-Cooling
Technology for Gas Turbines**

G. J. Vansosen, Jr., F. S. Stepka

Liquid-cooled systems and methods, assessment of the current technology status and requirements, comprehensive bibliography.

NASA RP-1038
N79-22427 31 pp
Avail NTIS 1979

**Synthetic Aperture Radar/Landsat
MSS Image Registration**

*H. E. Maurer, J. D. Oberholtzer,
P. E. Anuta*

Algorithms and procedures necessary to merge aircraft synthetic aperture radar (SAR) and Landsat multispectral scanner (MSS) imagery, design of a SAR/Landsat data merging system.

NASA RP-1039
N80-16405 233 pp
Avail NTIS 1979

**NASA JSC Water Monitor System: City
of Houston Field Demonstration**

*R. E. Taylor, E. L. Jeffers,
D. H. Fricks*

A water quality monitoring system with on-line and real time operation similar to the function in a spacecraft was investigated. Two major points were demonstrated: (1) the water monitor system has great potential in water monitoring and/or process control applications; and (2) the water monitor system represents a vast improvement over conventional (grab sample) water monitoring techniques.

NASA RP-1041
N79-28062 57 pp
Avail NTIS 1979

**Performance Evaluation Method for
Dissimilar Aircraft Design Using the
Square of the Wing Span for Non-
dimensional Comparisons of Aero-
dynamic Characteristics**

H. J. Walker

A rationale for using the square of the wing-span rather than the wing reference area as a basis for nondimensional comparisons of the aerodynamic and performance characteristics of aircraft that differ substantially in platform and loading.

NASA RP-1042
N79-30139 72 pp
Avail NTIS 1979

**Processing of On-Board Recorded Data
for Quick Analysis of Aircraft Perform-
ance—Rotor Systems Research Aircraft**

N. H. Michaud

A system of independent computer programs for the processing of digitized pulse code modulated and frequency modulated data.

NASA RP-1043
N79-33191 326 pp
Avail NTIS 1979

Wind Study for High Altitude Platform Design

T. W. Strganac

An analysis of upper air winds to define the wind environment at potential operating altitudes for high altitude powered platform concepts.

NASA RP-1044
N80-12661 288 pp
Avail NTIS 1979

The Physiological Basis for Spacecraft Environmental Limits

J. M. Waligora

Limits for operational environments in terms of acceptable physiological changes: contaminants, temperature, acceleration, noise, rf radiation, and weightlessness.

NASA RP-1045
N80-15788 229 pp
Avail NTIS 1979

Measurement of Aircraft Speed and Altitude

W. Gracey

Problems involved in measuring speed and altitude with pressure-actuated instruments (altimeter, airspeed indicator, true-airspeed indicator, Machmeter, and vertical-speed indicator).

NASA RP-1046
N80-24296 311 pp
Avail NTIS 1980

Measurement Techniques for Trace Metals in Coal-Plant Effluents: A Brief Review

J. J. Singh

The strong features and limitations of techniques for determining trace elements in aerosols emitted from coal plants.

NASA RP-1047
N79-33611 34 pp
Avail NTIS 1979

Procedure for Extraction of Disparate Data From Maps Into Computer Data Bases

B. G. Junkin

A procedure for extracting disparate sources of data from geographic maps, and for the conversion of these data into a suitable format for processing on a computer-oriented information system.

NASA RP-1048
N79-33858 23 pp
Avail NTIS 1979

The Stratosphere: Present and Future

R. D. Hudson, E. J. Reed

The three basic elements of stratospheric science-laboratory measurements, atmospheric observations, and theoretical studies.

NASA RP-1049
N80-14641 443 pp
Avail NTIS 1979

Classical Aerodynamic Theory

R. T. Jones

Theories of incompressible potential flow and research on the aerodynamic forces on wing and wing sections of aircraft and on airship hulls.

NASA RP-1050
N80-15033 308 pp
Avail NTIS 1979

Thermodynamic Properties of Nitrogen Gas Derived From Measurements of Sound Speed for Cryogenic Wind Tunnels

B. Younglove, R. D. McCarty

A vital equation of state for nitrogen was determined by use of newly measured speed-of-sound data and existing pressure-density-temperature data in a multiproperty-fitting technique.

NASA RP-1051
N80-14257 56 pp
Avail NTIS 1979

Sealed-Cell Nickel-Cadmium Battery Applications Manual

W. R. Scott, D. W. Rusta

The design, procurement, testing, and application of aerospace quality, hermetically sealed nickel-cadmium cells and batteries.

NASA RP-1052
N80-16095 533 pp
Avail NTIS 1979

Results of the August 1977 Soviet and American Meteorological Rocketsonde Intercomparison Held at Wallops Island, Virginia

F. J. Schmidlin, J. R. Duke,

A. I. Ivanovsky, et al.

A coordinated program of rocketsonde investigations along about 60° E and 70° W between the United States and U.S.S.R.

NASA RP-1053
N80-16682 193 pp
Avail NTIS 1980

Thunderstorm-Environment Interactions Determined With Three-Dimensional Trajectories

G. S. Wilson

Diagnostically determined three dimensional trajectories were used to reveal some of the scale interaction processes that occur between convective storms and their environment.

NASA RP-1054

N80-16675

Avail NTIS

163 pp

1980

Some Human Factors Issues in the Development and Evaluation of Cockpit Alerting and Warning Systems

R. J. Randle, Jr., W. E. Larsen,

D. H. Williams

A set of general guidelines for evaluating newly developed cockpit alerting and warning system in terms of human factors issues.

NASA RP-1055

N80-15821

Avail NTIS

65 pp

1980

Orbiter Landing Loads Math Model Description and Correlation With ALT Flight Data

D. A. Hamilton, J. A. Schlesinger,

G. A. Zupp, Jr.

Results of the Space Shuttle approach and landing test to assess landing gear characteristics and performance and to verify landing dynamic analyses.

NASA RP-1056

N80-16091

Avail NTIS

27 pp

1980

Handbook of Lunar Materials

R. J. Williams, J. J. Jadwick

The physical, chemical, thermodynamic, and geologic data of lunar rocks, minerals, and processes.

NASA RP-1057

N80-16009

Avail NTIS

133 pp

1980

Stratospheric Aerosol Modification by Supersonic Transport Operations With Climate Implications

O. B. Toon, R. P. Turco,

J. B. Pollack, et al.

The potential effects on stratospheric aerosols of supersonic transport emissions of sulfur dioxide gas and submicron size soot granules.

NASA RP-1058

N80-15726

Avail NTIS

20 pp

1980

Conference Publications

Proceedings of the SCAR Conference

Aerodynamics, stability and control, propulsion, environmental factor, airframe structures and materials, design integration.

Part 1

NASA CP-1	
N77-17996	478 pp
Avail NTIS	1976

Part 2

NASA CP-1	
N77-18019	547 pp
Avail NTIS	1976

The Structure and Content of the Galaxy and Galactic Gamma Rays

C. E. Fichtel, F. W. Stecker

Gamma radiation investigations by COS-B and SAS-2 satellites, data from CO surveys of the galaxy and the galactic distribution of pulsars, theories of galactic gamma ray emission.

NASA CP-2	
N77-20977	356 pp
Avail NTIS	1977

Systems Reliability Issues for Future Aircraft

Reliability of adaptive controls for future aircraft.

NASA CP-3	
N77-22808	212 pp
Avail NTIS	1975

Inversion Methods in Atmospheric Remote Sounding

A. Deepak

The mathematical theory of inversion methods applied to the remote sounding of atmospheric temperature, humidity, and aerosol constituent.

NASA CP-4	
N78-12586	609 pp
Avail NTIS	1977

The Use of Nonhuman Primates in Space

R. C. Simmonds, G. H. Bourne

Space related biomedical research involving nonhuman primates. Conference, December 1974.

NASA CP-5	
N78-11663	390 pp
Avail NTIS	1977

Application of Remote Sensing to the Chesapeake Bay Region

W. T. Chen, G. W. Freas, Jr., G. D. Hickman, et al.

Part 1. Executive Summary

NASA CP-6	
N78-23537	47 pp
Avail NTIS	1978

Part 2. Proceedings

NASA CP-6	
N78-21526	388 pp
Avail NTIS	1978

Fourth NASA Inter-Center Control Systems Conference

Space vehicle control applications; aircraft guidance, control, and handling qualities. Conference, November 1969.

NASA CP-7	
N78-23010	504 pp
Avail NTIS	1978

Advances in Engineering Science

Volume 1. Materials science, fracture mechanics, impact and vibration testing.

NASA CP-2001	
N77-10230	360 pp
Avail NTIS	1976

Volume 2. Structural dynamics.

NASA CP-2001	
N77-10265	457 pp
Avail NTIS	1976

Volume 3. Acoustics, environmental modeling, energy technology.

NASA CP-2001	
N77-10305	464 pp
Avail NTIS	1976

Volume 4. Inviscid flow, viscous flow, aircraft aerodynamics, fluid mechanics, propulsion and combustion, flight dynamics and control.

NASA CP-2001	
N77-10345	521 pp
Avail NTIS	1976

Flight Mechanics / Estimation Theory Symposium

A. Fuchs

Computation of relative motion, rapid satellite life-time estimation, mission analysis system design, satellite attitude prediction.

NASA CP-2002	
N78-76855	265 pp
Avail NASA IERC	1975

Free Drifting Buoys

Tracking systems and techniques; deployment and retrieval; simulation, sensors, and data; recent experience and plans.

NASA CP-2003
N77-16675 378 pp
Avail NTIS 1974

Atmospheric Aerosols: Their Optical Properties and Effects

Computations based on thermodynamic equilibrium and Mie theory.

NASA CP-2004
N77-15963 316 pp
Avail NTIS 1976

Supplement. Digest of technical papers.

NASA CP-2004
N77-15964 46 pp
Avail NTIS 1976

Aircraft Piston Engine Exhaust Emission Symposium

Emission measurement problems, data reduction procedures, flight testing, emission reduction techniques.

NASA CP-2005
N77-17081 373 pp
Avail NTIS 1976

Proceedings and Findings of 1976 Workshop on Ride Quality—Passenger Acceptance of Transportation Systems

A. R. Kublthau

NASA CP-2006
N77-27710 86 pp
Avail NTIS 1976

Ninth Conference on Space Simulation

Spacecraft testing; facilities and test equipment; system and subsystem test; life sciences, medicine, and space; physical environmental factors; chemical environmental factors; contamination; space physics; thermal protection.

NASA CP-2007
N79-19013 470 pp
Avail NTIS 1977

High Reynolds Number Research

D. D. Baals

Fundamental aerodynamics questions for which high Reynolds number experimental capability is required; design features of the NASA Langley Transonic Facility.

NASA CP-2009
N77-27139 185 pp
Avail NTIS 1977

Terrestrial Photovoltaic Measurements

Terrestrial solar irradiance, solar simulation and reference cell calibration, cell and array measurement procedures.

NASA CP-2010
N77-30521 393 pp
Avail NTIS 1976

Proceedings of the 1977 MACSYMA Users' Conference

Technical aspects of MACSYMA, a large symbolic and algebraic system.

NASA CP-2012
N77-28750 596 pp
Avail NTIS 1977

Summary Report: Workshop on Vehicle Ride Quality

A. R. Kublthau, A. W. Wicbansky

Procedures to optimize urban transportation with emphasis on vehicle ride quality. Workshop, August 1975.

NASA CP-2013
N78-11705 167 pp
Avail NTIS 1977

Essays on the History of Rocketry and Astronautics: Proceedings of the Third Through the Sixth History Symposia of the International Academy of Astronautics

R. C. Hall

Early solid propellant rocketry, rocketry and astronautics after 1880, development of liquid and solid propellant rockets from 1880 to 1945, rocketry and astronautics after 1945. Symposia, October 1969, October 1970, September 1971, October 1972.

Volume 1
NASA CP-2014
N77-33030 244 pp
Avail GPO 1977

Volume 2
NASA CP-2014
N77-33048 476 pp
Avail GPO 1977

Standardization, Certification, Maintenance, and Dissemination of Large-Scale Engineering Software Systems

T. G. Toridis, H. G. McComb, Jr., K. Khozeimeh

NASA CP-2015
N77-33876 103 pp
Avail NTIS 1977

Lean Premixed/Prevaporized Combustion

A. H. Lefebvre

Recommendations on the status and application of lean premixed/prevaporized combustion to the aircraft gas turbine for the reduction of pollutant emissions.

NASA CP-2016

N77-33297

Avail NTIS

46 pp

1977

An Assessment of Technology for Turbojet Engine Rotor Failures

E. A. Witmer

Design considerations, objectives, and approaches in containing rotor burst debris; methods for determining the fracture resistance of various materials used in providing lightweight shielding from fragment impact.

NASA CP-2017

N78-10068

Avail NTIS

425 pp

1977

Sixth NASTRAN Users' Colloquium

NASTRAN programming and substructuring methods, fluids and thermal applications.

NASA CP-2018

N78-12443

Avail NTIS

473 pp

1977

Proceedings of the ASPE/MSFC Symposium on Engineering and Productivity Gains From Space Technology

Aerospace technology findings in regard to nonaerospace applications, energy generation, materials and processes, Earth observation, advances and benefits of electronics.

NASA CP-2019

N77-30273

Avail NTIS

279 pp

1977

Solar Cell High Efficiency and Radiation Damage

Silicon solar cell analysis and fundamental measurements, silicon cell technology, gallium arsenide research and technology, radiation effects on silicon and gallium arsenide cells.

NASA CP-2020

N78-13527

Avail NTIS

221 pp

1977

Aircraft Engine Emissions

Components, controls, energy efficient engine designs, noise and pollution reduction.

NASA CP-2021

N78-11063

Avail NTIS

452 pp

1977

NASA Workshop on Solar-Terrestrial Studies From a Manned Space Station

The mechanism of the solar radiation and its effect on the environment, instrumentation requirements in the exploration of the solar and terrestrial system.

NASA CP-2024

N77-32549

Avail NTIS

42 pp

1977

Agricultural Aviation Research

H. L. Chevalier, L. F. Bouse

The current state of the art of agricultural aviation, potentially productive short and long range research and development areas, communications between research scientists and engineers involved in agricultural research.

NASA CP-2025

N78-12999

Avail NTIS

151 pp

1977

AIAA/MSFC Symposium on Space Industrialization: Proceedings

Current and projected technologies required for utilizing extraterrestrial environments to produce energy, information, or materials and provide services of value on Earth or to Earth.

NASA CP-2026

N78-18088

Avail NTIS

627 pp

1976

Proceedings of the 1977 NASA/ISHM Microelectronics Conference

S. V. Caruso

Current and future requirements for research development, manufacturing, and education in the field of hybrid microelectronic technology.

NASA CP-2027

N78-16266

Avail NTIS

170 pp

1977

Proceedings of the First Annual Meteorological and Environmental Inputs to Aviation Systems Workshop

D. W. Camp, W. Frost

Aircraft design, simulation, and general aviation.

NASA CP-2028

N78-19711

Avail NTIS

335 pp

1977

Third National Aeronautics and Space Administration Weather and Climate Program Science Review

E. R. Kreins

Research results of developing experimental and prototype operational systems, sensors, and space facilities for monitoring and understanding the atmosphere.

NASA CP-2029
N79-20575
Avail NTIS

304 pp
1977

Active Microwave Users Workshop Report

R. E. Matthews

Seasat land experiments, program planning, synthetic aperture radar data processing, applications.

NASA CP-2030
N78-21562
Avail NTIS

300 pp
1978

Summer Workshop on Near-Earth Resources

J. R. Arnold, M. B. Duke

The possible large scale use of extraterrestrial resources to construct structures in space or to return to Earth as supplements for terrestrial resources.

NASA CP-2031
N78-16973
Avail NTIS

107 pp
1978

Future Computer Requirements for Computational Aerodynamics

Recent advances in computational aerodynamics, potential benefits of a national aerodynamic simulation facility.

NASA CP-2032
N78-19778
Avail NTIS

515 pp
1978

Jet Aircraft Hydrocarbon Fuels Technology

J. P. Longwell

Prediction of tradeoffs among fuel refining, distribution, and aircraft operating costs; combustor liner temperature and emissions studies; and practical simulator investigations of the effect of high freezing point and low thermal stability fuels on aircraft fuel systems.

NASA CP-2033
N78-19325
Avail NTIS

64 pp
1978

Wind Turbine Structural Dynamics

D. R. Miller

Methods for calculating dynamic loads, aeroelasticity stability, wind loads, both steady and transient, critical design conditions, drive train dynamics, behavior of operating wind turbines.

NASA CP-2034
N78-19616
Avail NTIS

280 pp
1978

Large Space Systems Technology

E. C. Naumann, A. Butterfield

Mission requirements, structural concepts, materials, structural alignment, thermal control, metrology, technological forecasting.

Volume 1
NASA CP-2035
N79-10078
Avail NTIS

540 pp
1978

Volume 2
NASA CP-2035
N79-10097
Avail NTIS

505 pp
1978

CTOL Transport Technology, 1978

Part 1. Aircraft propulsion, structures and materials, laminar flow control.

NASA CP-2036
N78-27046
Avail NTIS

516 pp
1978

Part 2. Advanced aerodynamics and active controls, operations, and safety, advanced systems, energy efficiency.

NASA CP-2036
N78-29046
Avail NTIS

405 pp
1978

Guntersville Workshop on Solar-Terrestrial Studies

The effects of solar activity on geomagnetic activity; instrument requirements for interdisciplinary joint observational studies of the magnetosphere, the atmosphere, Sun-weather relationships.

NASA CP-2037
N78-19600
Avail NTIS

71 pp
1977

The 11th Aerospace Mechanisms Symposium

Spacecraft and missile components such as tail assemblies, radiometers, magnetometers.

NASA CP-2038
N79-21374
Avail NTIS

243 pp
1977

Proceedings of the USAF/NASA International Spacecraft Contamination Conference

J. M. Jemiola

Spacecraft modeling, determination of basic material properties, thruster plume characteristics and modeling, contamination prevention and control, contamination kinetics and effects.

NASA CP-2039

N79-25048 1219 pp
Avail NTIS 1978

The MSFC/UAH Data Management Symposium

A. Castelli

NASA CP-2040 423 pp
N78-74659 1978
Avail NTIS

The 1977 Goddard Space Flight Center Battery Workshop

Results of testing, analysis, and development of the sealed nickel cadmium cell system.

NASA CP-2041 579 pp
N79-21565 1977
Avail NTIS

Emerging Energy Alternatives for the Southeastern States

E. K. Stefanakos

Solar energy, wood energy, novel energy sources, agricultural and industrial process heat, waste utilization, energy conservation, ocean thermal energy conversion.

NASA CP-2042 149 pp
N78-28615 1978
Avail NTIS

Stratcom 8 Data Workshop and Supplement

E. L. Reed

The study of stratospheric photochemistry involving ozone, with secondary objectives including a study of the balloon environment, comparison of independent techniques for the measurement of O₃ and NO, development of new sensor systems.

NASA CP-2043 137 pp
N79-23461 1978
Avail NTIS

Planning for Airport Access: An Analysis of the San Francisco Bay Area

J. S. Dajani, J. V. Jucker, J. L. Jones

A description of the airport area, its current transportation capabilities, recommendations for future access planning.

NASA CP-2044 300 pp
N79-10942 1978
Avail NTIS

Advanced Technology Airfoil Research

Comprehensive review of airfoil research; development of computational aerodynamic codes for airfoil analysis and design, development of experimental facilities and test techniques, airfoil applications.

Volume 1, Part 1
NASA CP-2045 454 pp
N79-20030 1979
Avail NTIS

Volume 1, Part 2
NASA CP-2045 303 pp
N79-19989 1978
Avail NTIS

Volume 2
NASA CP-2046 262 pp
N80-21283 1979
Avail NTIS

Research Efforts in Aircraft Pollution

Emissions regulations, combustor modeling, combustor development, instrumentation, emission measurement, airport/airbase pollution, upper atmospheric pollution and chemistry.

NASA CP-2048 124 pp
X78-10171 1978

Proceedings of the NASA/Florida Institute of Technology Environmental Engineering Conference on Nitrogen Tetroxide With Emphasis on Space Shuttle

E. L. Rhodes

Methods of reducing the user hazards of nitrogen tetroxide, Kennedy Space Center developments in N₂O₄ control for the Space Shuttle, life support equipment and transportation.

NASA CP-2049 203 pp
N79-20424 1978
Avail NTIS

Flight Mechanics/Estimation Theory Symposium

Satellite attitude determination and control, orbit determination, onboard and ground attitude determination procedures, effect of atmosphere on Venus orbiter navigation, satellite-to-satellite tracking, satellite onboard navigation using global positioning system data.

NASA CP-2050

N79-14121

289 pp

Avail NTIS

1978

Hyperthermia as an Antineoplastic Treatment Modality

*S. A. T. Long, J. Shaeffer,
A. M. El-Mabdi*

Preclinical evaluation of hyperthermia for treating tumorous cancers.

NASA CP-2051

N79-10728

96 pp

Avail NTIS

1978

Helicopter Acoustics

Noise regulation concepts, design, operations and testing for noise control, helicopter noise prediction, research tools and measurements.

Part 1

NASA CP-2052

N78-32816

399 pp

Avail NTIS

1978

Part 2

NASA CP-2052

N79-10843

438 pp

Avail NTIS

1978

Asteroids: An Exploration Assessment

D. Morrison, W. C. Wells

Current state of asteroid science, need for future space missions to gain more knowledge on asteroid relationship to solar system formation.

NASA CP-2053

N78-29007

295 pp

Avail NTIS

1978

YF-12 Experiment Symposium, Volume 1

Propulsion system performance, inlet time varying distortion, structures, aircraft controls, propulsion controls, and aerodynamics.

NASA CP-2054

N78-32055

286 pp

Avail NTIS

1978

YF-12 Experiments Symposium, Volume 2

NASA CP-2054

126 pp

1978

YF-12 Experiments Symposium, Volume 3

NASA CP-2054

542 pp

1978

Engineering and Scientific Data Management

The application of data management systems to engineering and scientific data.

NASA CP-2055

255 pp

N78-33776

1978

Avail NTIS

Exploratory Meeting on Atmospheric Electricity and Severe Storms

W. W. Vaughan

Atmospheric electricity and its relationship to severe storms, the feasibility of developing a set of instruments for either a Space Shuttle or an unmanned satellite, the scientific rationale which would warrant further in-depth assessment, involvement and development of supporting activities by NASA.

NASA CP-2056

30 pp

N78-29669

1978

Avail NTIS

Proceedings of the 2nd Annual Workshop on Meteorological and Environmental Inputs to Aviation Systems

W. Frost, D. W. Camp, D. E. Durham

The major objectives of the workshop were to satisfy such needs of the sponsoring agencies as the expansion of understanding and knowledge of the interactions of the atmosphere with aviation systems, the better definition and implementation of services to operators, and the collection and interpretation of data for establishing operational criteria.

NASA CP-2057

259 pp

N79-17413

1978

Avail NTIS

Future Orbital Power Systems Technology Requirements

Comment on current and planned programs and opportunities for technology investment.

NASA CP-2058

195 pp

N79-10122

1978

Avail NTIS

Research in Computerized Structural Analysis and Synthesis

H. G. McComb, Jr.

Computer applications in dynamic structural analysis and structural design modeling.

NASA CP-2059

N79-10448

224 pp

Avail NTIS

1978

The 14th Annual Conference on Manual Control: Digital Simulation of Human Operator Dynamics

Human operator dynamics during actual manual control or while monitoring the automatic control systems involved in air-to-air tracking, automobile driving, the operator of undersea vehicles, remote handling.

NASA CP-2060

N79-15588

692 pp

Avail NTIS

1978

Avionics and Controls Research and Technology

H. A. Rediess, D. E. McIver

Technology needs and opportunities, the role of NASA in avionics and controls research.

NASA CP-2061

N79-15898

84 pp

Avail NTIS

1979

Seventh NASTRAN User's Colloquium

Fluids and thermal applications, NASTRAN programming, substructuring methods, unique new applications, general auxiliary programs, specific applications, new capabilities.

NASA CP-2062

N78-32466

499 pp

Avail NTIS

1978

Human Neurological Development: Past, Present and Future

R. Pelligrina

Vision; vestibular function; intelligence; nutrition; treatment of neurological dysfunctions, coma, and convulsive seizures.

NASA CP-2063

N79-15887

60 pp

Avail NTIS

1978

Tools for Embedded Computing Systems Software

Tools and the software environment; tools and software requirements, design, and specification; tools and language processors; tools and verification and validation.

NASA CP-2064

N79-13736

137 pp

Avail NTIS

1978

Recent Advances in Structures for Hypersonic Flight

Engine structures, cooled airframe structures, hot structures, thermal protection systems, cryogenic tankage structures, cryogenic insulation, analysis of thermal structures.

Part 1

NASA CP-2065

N79-21422

533 pp

Avail NTIS

1978

Part 2

NASA CP-2065

N79-21435

408 pp

Avail NTIS

1978

Ozone Contamination in Aircraft Cabins

The problem and solution to the physical ozone irritation caused by ozone concentrations in the cabins of high-altitude aircraft.

NASA CP-2066

N79-21021

81 pp

Avail NTIS

1979

The Rotary Engine: A Candidate for General Aviation

Nonturbine engine research programs for general aviation, future requirements for general aviation powerplants.

NASA CP-2067

N79-15961

190 pp

Avail NTIS

1978

The Saturn System

D. M. Hunten, D. Morrison

Mission planning for orbiter and entry probes of the Saturn system emphasizes scientific studies of Saturn, its satellites, its rings, and its magnetosphere.

NASA CP-2068

N79-16758

423 pp

Avail NTIS

1978

Proceedings of the Workshop on an Electromagnetic Positioning System in Space

W. A. Oran

Study of metallic glasses, investigations of the properties of high temperature materials.

NASA CP-2069

N79-13069

25 pp

Avail NTIS

1978

Radar, Insect Population Ecology, and Pest Management

C. R. Vaughn, W. Wolf, W. Klassen

The potential role of radar in insect ecology studies and pest management and phenomena with insect movement.

NASA CP-2070

N79-19592

252 pp

Avail NTIS

1979

Spacecraft Charging Technology, 1978
The interaction of the aerospace environment with spacecraft surfaces and onboard, high voltage spacecraft systems operating over a wide range of altitudes from low Earth orbit to geosynchronous orbit.

NASA CP-2071
N79-24001 908 pp
Avail NTIS 1979

Second International Colloquium on Mars: Abstracts for a Colloquium

NASA CP-2072
N79-16757 97 pp
Avail NTIS 1979

Soil Moisture Workshop

*J. L. Heilman, D. G. Moore,
T. J. Schmugge, et al.*

The objectives of the workshop were to evaluate the state of the art of remote sensing of soil moisture, examine the needs of potential users, and make recommendations concerning the future of soil moisture research and development.

NASA CP-2073
N79-16329 219 pp
Avail NTIS 1978

Carbon Fiber Risk Analysis

The scope and status of the effort to assess the risks associated with the accidental release of carbon/graphite fibers from civil aircraft.

NASA CP-2074
N79-22196 245 pp
Avail NTIS 1979

Government/Industry Workshop on Payload Loads Technology

The problems of balancing the design criteria between launch and orbit operations and developing analytical techniques that are reliable, accurate, efficient, and low cost.

NASA CP-2075
N79-20162 874 pp
Avail NTIS 1978

Fourth National Aeronautics and Space Administration Weather and Climate Program Science Review

E. R. Kreins

Scientific research on severe storms and local weather, global weather, and climate.

NASA CP-2076
N79-20633 396 pp
Avail NTIS 1979

Quiet Powered-Lift Propulsion
New propulsion technology for powered-lift aircraft systems.

NASA CP-2077
N80-15127 426 pp
Avail NTIS 1979

Premixed Prevaporized Combustor Technology Forum

Engine interfaces, fuel-air preparation, autoignition, lean combustion, concept design studies.

NASA CP-2078
N79-24994 262 pp
Avail NTIS 1979

Graphite/Polyimide Composites: Conference on Composites for Advanced Space Transportation Systems

H. B. Dexter, J. G. Davis, Jr.
Fabrication, adhesives, test methods, structural integrity, design and analysis, advanced technology developments, high temperature polymer research, the state of the art of graphite/polyimide composites.

NASA CP-2079
N79-30297 449 pp
Avail NTIS 1979

The 12th Aerospace Mechanisms Symposium

Boom release mechanisms, separation on Space Shuttle orbiter/Boeing 747 aircraft, payload handling, spaceborne platform support, deployment of spaceborne antennas and telescopes.

NASA CP-2080
N79-21352 241 pp
Avail NTIS 1979

The 13th Aerospace Mechanisms Symposium

A. C. Bond
Propulsion; motion compensation; instrument pointing and adjustment; centrifuge testing; bearing design; vehicle braking; cargo handling; devices for satellite, missile, and hypersonic-wind-tunnel applications; space shuttle mechanical and thermal protection systems; techniques for building large space structures.

NASA CP-2081
N79-22539 300 pp
Avail NTIS 1979

**Flight Mechanics/Estimation Theory
Symposium With Application to Auto-
nomous Navigation and Attitude/
Orbit Determination**

A. J. Fuchs

Landsat landmark data, star sensing and pattern recognition, filtering algorithms for global positioning system, determining orbital elements for geostationary satellites.

NASA CP-2082
N79-26082
Avail NTIS

347 pp
1979

Laser Doppler Velocimetry Workshop

R. B. Owen

The potential of laser Doppler velocimetry as a technique for use in mapping flows in the several fluid systems under development for doing research on low-gravity processes.

NASA CP-2084
N79-22455
Avail NTIS

12 pp
1979

**The Science and Technology of Low
Speed and Motorless Flight**

P. W. Hanson

Low speed aerodynamics, new materials applications and structural concepts, advanced flight instrumentation, sailplane optimal flight techniques, self-launching and ultralight glider technology.

Part 1
NASA CP-2085
N79-23889
Avail NTIS

299 pp
1979

Part 2
NASA CP-2085
N79-27070
Avail NTIS

297 pp
1979

Aircraft Icing

B. J. Blaha

NASA CP-2086
N79-23912
Avail NTIS

147 pp
1979

**Fundamentals of Gas Turbine
Combustion**

M. Gerstein

Atomization and vaporization, combustion chemistry, combustion dynamics, combustion modeling.

NASA CP-2087
N79-25016
Avail NTIS

52 pp
1979

The 11th Annual Battery Workshop

The development, properties, and testing of nickel cadmium, metal hydrogen, and lithium systems.

NASA CP-2088
N79-28669
Avail NTIS

545 pp
1978

Space Missions to Comets

*M. Neugebauer, D. K. Yeomans,
J. C. Brandt, et al.*

The broad impact of a cometary mission with particular emphasis on scientific interest in a fly-by mission to Halley's comet and a rendezvous with Tempel 2.

NASA CP-2089
N80-11972
Avail NTIS

229 pp
1979

**Middle Atmosphere Electrodynamics:
Report of the Workshop on the Role of
the Electrodynamics of the Middle At-
mosphere on Solar Terrestrial Coupling**

N. C. Maynard

Review of the status of middle atmosphere electrodynamics and recommendations for future research.

NASA CP-2090
N79-25608
Avail NTIS

268 pp
1979

**Proceedings of Workshops to Define
Engineering Requirements for a Space
Vacuum Research Facility**

W. A. Oran, S. T. Wu, R. W. Hoffman
The construction of a molecular wake shield for the Shuttle orbiter, a collision model with a program depicting emitted molecular density around the spacecraft.

NASA CP-2091
N79-26076
Avail NTIS

152 pp
1979

Aeropropulsion 1979

State-of-the-art technology in aeronautical propulsion noise and air pollution control techniques, advances in supersonic propulsion for transport aircraft, composite materials and structures for reliable engine components, engine design for improved fuel consumption.

NASA CP-2092
N80-10205
Avail NTIS

464 pp
1979

Workshop on Thrust Augmenting Ejectors

*A. E. Lopez, D. G. Koenig,
D. S. Green, et al.*

The state of the art of ejector technology and the direction of future studies.

NASA CP-2093
N80-10107 509 pp
Avail NTIS 1979

Conference on Fire Resistant Materials: A Compilation of Presentations and Papers

D. A. Kourtidis, G. A. Johnson

Large-scale testing, fire toxicology, polymeric materials, fire modeling.

NASA CP-2094
N79-31166 287 pp
Avail NTIS 1979

Proceedings: Workshop on the Need for Lightning Observations From Space

*L. S. Christensen, W. Frost,
W. W. Vaughan*

Satellite instrumentation specifically designed for indicating the characteristics of lightning are of value in severe storms research, in engineering and operational problem areas, and in providing information on atmospheric electricity and its role in meteorological processes.

NASA CP-2095
N79-30869 255 pp
Avail NTIS 1979

Implications of Fuel-Efficient Vehicles on Ride Quality and Passenger Acceptance

A. M. Wiczansky, A. R. Kublitz

Ride quality and passenger acceptance problems associated with enhanced fuel efficiency of automobiles and aircraft, shifts in intermediate range (100-500 miles) travel from automobiles to public transit.

NASA CP-2096
N80-18990 120 pp
Avail NTIS 1979

Solar Cell High Efficiency and Radiation Damage, 1979

Progress in the effort to increase the end-of-life efficiency of solar cells for space use, silicon solar cell efficiency, radiation effects, gallium arsenide cells.

NASA CP-2097
N79-32640 290 pp
Avail NTIS 1979

Study of the Solar Cycle From Space

The objectives of and benefits to be derived from a program of solar cycle research, the role of space observations, including crucial missions, experiments, and the theoretical advances.

NASA CP-2098
N80-17944 366 pp
Avail NTIS 1980

Earth Radiation Budget Science

Climate modeling, climate diagnostics, radiation modeling, radiation variability and correlation studies, cloudiness and the radiation budget, and radiation budget and related measurements in 1985 and beyond.

NASA CP-2100
N79-32797 79 pp
Avail NTIS 1978

Flight Technology Improvement—Spaceborne Optical Radiometric Instruments, Attitude Control, and Electro-mechanical and Power Subsystems

Optical radiometric instruments and calibration, attitude control and determination, electromechanical and power subsystem.

NASA CP-2101
N80-13152 76 pp
Avail NTIS 1979

Conference of Remote Sensing Educators (CORSE-78)

Methods of improving the teaching of remote sensing, Earth resources, image interpretation, data processing concepts.

NASA CP-2102
N80-20003 664 pp
Avail NTIS 1978

Models of Human Operators in Vision Dependent Tasks

M. C. Waller

Descriptive overviews of some existing models, and techniques of modeling the human operator.

NASA CP-2103
N79-33838 86 pp
Avail NTIS 1979

Proceedings: Third Annual Workshop on Meteorological and Environmental Inputs to Aviation Systems

D. W. Camp, W. Frost

Training, flight operations, accident investigation, air traffic control, airports, winds and wind shear, icing and frost, atmospheric electricity and lightning, fog, visibility, ceilings, turbulence.

NASA CP-2104
N80-14633 190 pp
Avail NTIS 1979

Summary of the NASA/MSFC FY-79 Severe Storm and Local Weather Research Review—Cloud Physics, Atmospheric Electricity, and Mesoscale/Storm Dynamics Research

NASA CP-2105
N79-33722 92 pp
Avail NTIS 1979

Large Wind Turbine Design Characteristics and R&D Requirements

S. Lieblein
Large wind turbine research and development.
NASA CP-2106
N80-16453 459 pp
Avail NTIS 1979

Nuclear-Pumped Lasers—Efficient Conversion of Energy Liberated in Nuclear Reactions to Coherent Radiation

Nuclear-pumped laser modeling, nuclear volume and foil excitation of laser plasmas, proton beam simulations, nuclear flashlamp excitation, reactor laser systems studies.
NASA CP-2107
N80-13438 140 pp
Avail NTIS 1979

Supersonic Cruise Research 1979

Part 1
NASA CP-2108
X80-72343 538 pp
1980

Part 2
NASA CP-2108
X80-72367 408 pp
1980

Remote Sensing and Problems of the Hydrosphere

E. D. Goldberg
The classification of lakes, identification and quantification of major functional groups of phytoplankton, sources and sinks of biochemical factors, and temporal and regional variability of surface features, atmospheric processes linked to hydrospheric process through the transfer of matter via aerosols and gases, particle fluxes to the aquatic environment, global geochemical problems.

NASA CP-2109
N80-12718 67 pp
Avail NTIS 1979

Proceedings of Shuttle Environmental Effects Program Review

A. E. Potter

Measurements of Titan exhaust cloud effluents, mesoscale and microphysical acid rain models, proposed submesoscale model, regional air quality monitoring and rain collection systems, ecological impact of solid rocket motor exhaust effluents.

NASA CP-2110
N80-15649 124 pp
Avail NTIS 1980

Scientific Research With the Space Telescope: International Astronomical Union Colloquium No. 54

M. S. Longair, J. W. Warner

Investigations of small solar system objects, the physical characteristics of ionized gaseous nebulae, the central regions of active galaxies and quasars, problems of cosmology, the distribution and composition of interstellar matter.

NASA CP-2111
N80-22130 331 pp
Avail NTIS 1979

Preliminary Applications and Evaluation Results. Lixiscope: Proceedings of the Lixiscope Conference

The principle of the lixiscope and its potential uses in industry, clinical medicine, and astrophysics.

NASA CP-2112
N80-12384 89 pp
Avail NTIS 1978

HEAO Science Symposium

C. Dailey, W. Johnson

X-ray variability, extragalactic astronomy, x-ray ion line emission, optical identification and spectroscopy of x-ray sources, results from HEAO 2 imaging and nonimaging instruments.

NASA CP-2113
N80-14977 463 pp
Avail NTIS 1979

Validation Methods for Fault-Tolerant Avionics and Control Systems

The state of the art in fault tolerant computer validation.

NASA CP-2114
N80-12741 112 pp
Avail NTIS 1979

Radio Interferometry: Techniques for Geodesy

Progress in the development and application of radio interferometry as a tool for geophysical research.

NASA CP-2115
N80-28798 472 pp
Avail NTIS 1980

Operational Applications of Satellite Snowcover Observations

A. Rango, R. Peterson

The history of remote sensing of snow cover, techniques for interpreting Landsat and NOAA satellite data, the status of future systems for continuing snow hydrology applications, the use of snow cover observations in streamflow forecasts by applications systems verification and transfer participants and selected foreign investigators, the benefits of using satellite snow cover data in runoff prediction.

NASA CP-2116
N80-25742 294 pp
Avail NTIS 1980

The 1979 Goddard Space Flight Center Battery Workshop

G. Halpert

Results of testing, analysis, and development of the sealed nickel cadmium cell system, metal hydrogen and lithium cell technology and applications.

NASA CP-2117
N80-20820 521 pp
Avail NTIS 1980

Large Space Systems Technology, 1979—Antenna and Space Platform Systems Conference

J. C. Ward, Jr.

Large antennas systems, large space platform systems.

NASA CP-2118
N80-19145 487 pp
Avail NTIS 1980

Assessment of Carbon Fiber Electrical Effects

The risks associated with the use of carbon fiber composites in civil aircraft, the need for protection of civil aircraft equipment from fire-released carbon fibers.

NASA CP-2119
N80-19193 278 pp
Avail NTIS 1980

Resource Management on the Flight Deck

G. E. Cooper, M. D. White, J. K. Lauber
Several approaches to the training and selection of aircrew, the psychology of the flight deck situation.

NASA CP-2120
N80-22283 247 pp
Avail NTIS 1980

Proceedings of the Aero-Optics Symposium on Electromagnetic Wave Propagation From Aircraft

Wind-tunnel and flight experiments concerning natural and induced turbulence around an airplane and the effects on propagation characteristics of an emitter mounted in the airplane.

NASA CP-2121
N80-25588 666 pp
Avail NTIS 1980

Cryogenic Technology

Part 1
NASA CP-2122
N80-72515 273 pp
Avail NASA GSFC 1979

Part 2
NASA CP-2122
N80-72516 159 pp
Avail NASA GSFC 1979

Flight Mechanics/Estimation Theory Symposium

A. J. Fuchs
Methods of determining satellite orbit and attitude parameters.

NASA CP-2123
N80-28380 260 pp
Avail NTIS 1980

An Assessment of Ground-Based Techniques for Detecting Other Planetary Systems

D. C. Black, W. E. Brunk
The feasibility and limitations of ground-based techniques for detecting other planetary systems, the level of accuracy at which these limitations would occur, the extent to which they can be overcome by new technology and instrumentation.

Volume 1. An Overview—Workshop Conclusions

NASA CP-2124
N80-18997 48 pp
Avail NTIS 1980

An Assessment of Ground-Based Techniques for Detecting Other Planetary Systems (cont.)

Volume 2. Position Papers

The capabilities of several astronomical interferometer system concepts, the effects of the Earth's atmosphere on astrometric precision.

NASA CP-2124
N80-25224
Avail NTIS

253 pp
1980

Thermal Energy Storage: Fourth Annual Review Meeting

The development of low cost thermal energy storage technologies in terms of near term oil savings, solar energy applications, and dispersed energy systems for energy conservation policies.

NASA CP-2125
N80-22788
Avail NTIS

650 pp
1980

General Aviation Propulsion

The quiet, clean, general aviation turbofan program; the general aviation turbine engine study program; the general aviation propeller technology program; the advanced rotary, diesel, and reciprocating engine programs.

NASA CP-2126
N80-22327
Avail NTIS

437 pp
1980

Proceedings of the 14th Aerospace Mechanisms Symposium

Aviation propulsion, aerodynamic devices, and crew safety; space vehicle propulsion, guidance, and control; spacecraft deployment, positioning, and pointing; spacecraft bearings, gimbals, and lubricants; large space structures.

NASA CP-2127
N80-23495
Avail NTIS

327 pp
1980

Lightning Technology: Proceedings of a Technical Symposium

Phenomenology, measurement, detection, protection, interaction, and testing; lightning electromagnetics, protection of ground systems, simulated lightning testing.

NASA CP-2128
N80-21927
Avail NTIS

444 pp
1980

Validation Methods Research for Fault-Tolerant Avionics and Control Systems

J. W. Gault, K. S. Trivedi, J. B. Clary

A preliminary validation methodology for fault tolerant systems; a general framework for a validation methodology.

NASA CP-2130
N80-23008
Avail NTIS

105 pp
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The general application of finite element methodology and the specific application of NASTRAN to a wide variety of static and dynamic structural problems.

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Remote Sensing and Problems of the Hydrosphere. A Focus for Future Research

E. D. Goldberg

Problems of water quality which are addressable with remote sensors; the chemical, biological, geological, and physical dynamics of natural ecosystems.

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Rotordynamic Instability Problems in High-Performance Turbomachinery

Diagnostic and remedial methods; rotordynamic control by feedback method, use of elastometric elements, use of hydrodynamic journal bearings and supports.

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High Resolution Infrared Spectroscopy Techniques for Upper Atmospheric Measurements

D. G. Murcay, J. M. Alvarez

Infrared heterodyne techniques for detecting molecules predicted to be present but not yet detected in the upper atmosphere.

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Time-of-Day Corrections to Aircraft Noise Metrics

S. Clevenson, W. T. Shepherd

The historical and background aspects of time-of-day corrections.

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1980

Review of Spectroscopic Data for Measurements of Stratospheric Species

A. Goldman, J. Hoell

A review of the current status of experimental and theoretical spectroscopic data on molecules of stratospheric interest, recommendations for additional research.

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Heterodyne Systems and Technology

Active and passive systems, local oscillators, tunable diode lasers, astronomical systems.

Part 1

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Part 2

NASA CP-2138

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Exploratory Meeting on Airborne Doppler Lidar Wind Velocity Measurements

G. H. Fichtel, J. W. Kaufman,

W. W. Vaughan

The scientific interests and applications of the airborne Doppler lidar wind velocity measurement system to severe storms and local weather, convective phenomena, local circulation, atmospheric boundary layer, atmospheric dispersion, industrial aerodynamics.

NASA CP-2140

N80-26999

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1980

Selected NASA Research in Composite Materials and Structures

Failure prediction techniques, buckling and postbuckling research, laminate fatigue analysis, damage tolerance, high temperature resin matrix composites, electrical hazards of carbon fiber composites.

NASA CP-2142

N80-28436

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